Public financing of health sector in the context of the decentralization process

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Contents

1. Executive Summary

During the period 2002 – 2010, a set of reforms were implemented, among them decentralization which has affected directly or indirectly the functioning of the health financing system. Nevertheless, as of today there are no studies than can clarify if the reforms implemented are contributing or not to the compliance of health system objectives. This document has the purpose to explain how health public financing in the regional governments during the process of decentralization during the period 2002-2010 has occurred; it analyzes if during this process regional governments have received not only more resources according to the functions entrusted, but also if their management capacity has improved and more distribution equity has occurred among regions.

The document is focused on the analysis of health public expending distribution according to government levels in order to determine the degree of concentration in the national level within a context that has decentralized most functions. After analyzing the level and distribution of resources, the execution capacity of resources assigned to health according to government levels are analyzed, given that part of the unsatisfied demand happens not only because resources are not enough but due to capacity restrictions of subnational governments in the execution of health expending.

An important aspect of the study is the equity distribution analysis among regional governments; the development of an equitable distribution scheme for resources according to need and demand, especially on health, is a question of dire necessity. Within this framework, the proposal of the Regional Governments National Assembly (ANGR) for fiscal decentralization and taxation co-participation is under discussion.

From this document is evident that health expenditures have increased significantly during the last eight years in both levels of government, the increase being proportionally higher in RG´s. Nevertheless, a second verification shows that even though this has occurred, to service the current beneficiary population according to the basic health plan approved by law would represent a gap estimated in more than S/. 2 billion, thus the challenge is not only on more resources but in the allocation criteria, the distribution models among regions and, of course, the management capacity of regional governments in the execution of these resources.

2. Distribution of public financing on health according to government levels

This section addresses the question: How has the responsibility in the administration of financial resources on health shifted according to government levels? This variation intent to be a variable that will put us closer to the level of fiscal decentralization achieved during this period.[1]

For this purpose, the public financing scheme will be described first, both for current expenses, as well as capital expenditures in the NG and RG´s.

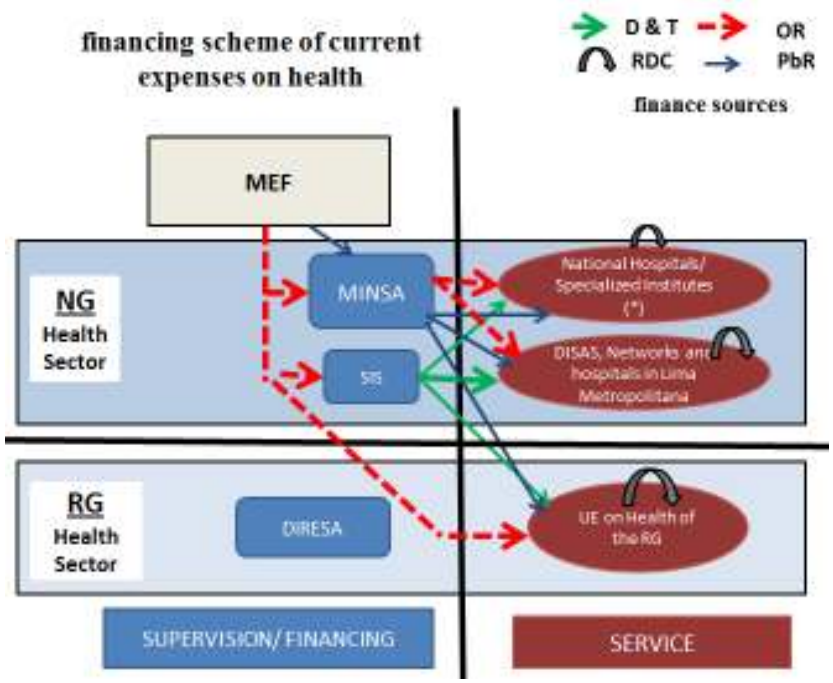
Current expenses on health services (chart 1) are financed basically by means of three sources of funding:

- Ordinary resources (OR), whose main assignor is the MEF and finances the bills both of the NG and the RG´s. As of 2008, MINSA receives from the MEF funds to assign resources to Programs by Results (PbR) for regional bills.
- Donations and transfers (D&T), which in the case of health services correspond mainly to the SIS transfers as reimbursements for services provided to affiliates.
- Resources directly collected (RDC), is the income of health providers for the sale of services and/or medications, and is known as “pocket money” because the users are the ones paying for the service.

Even though the decentralization process is active, part of the resources allocated to the UE of the RG´s are determined directly by MINSA, such as the case of funds for the Strategic Programs by Results (PbR), which added to the transfers made by SIS, may result in a significant amount of funds resolved by the central level.

[1] An analysis of the Presupuesto Institucional de Apertura –PIA (Opening Institution Budget) is not made because it varies too much with regards to the resources that are really managed by health institutions. Also, the PIA of the RG´s does not include the resources reaching the regions as transfers from SIS and also it does not include the balances of the statements of previous years that are included and executed in a fixed year.

Chart 1



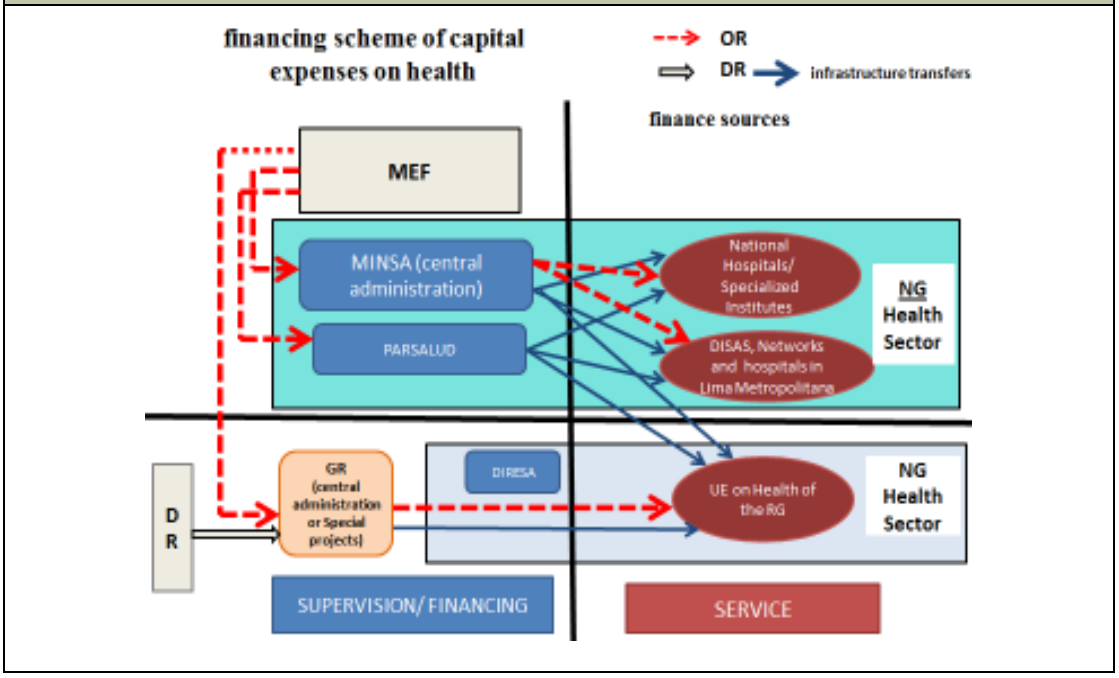
In the case of capital expenditures (chart 2) there is a difference in financing according to government levels. Capital expenditures of NG service providers are financed basically with OR, funds that come directly from the public treasury. Conversely, capital expenditures on health in the RG´s have additionally to OR, the DR mainly from the Canon as source to finance these expenses.

There is also another difference, the method to execute resources according to the type of capital expenditure. A significant part of financial resources assign to the purchase of equipment (furniture, medical equipment, weighing scales, etc.)[2] is transferred to UE´s. These UE´s directly handle their procurement processes for the supply of their services.

Likewise, the implementation of public investment projects is executed and administrative resolved by institutions having supervision and financing functions. In the case of the NG is MINSA and PARSALUD who execute the PIP. In this case, there is no flow of financial resources but basically a flow of goods.

[2] This type of goods is classified as capital expenditures and not as goods and services, given that their life term does not end with consumption, and can be used in later periods.

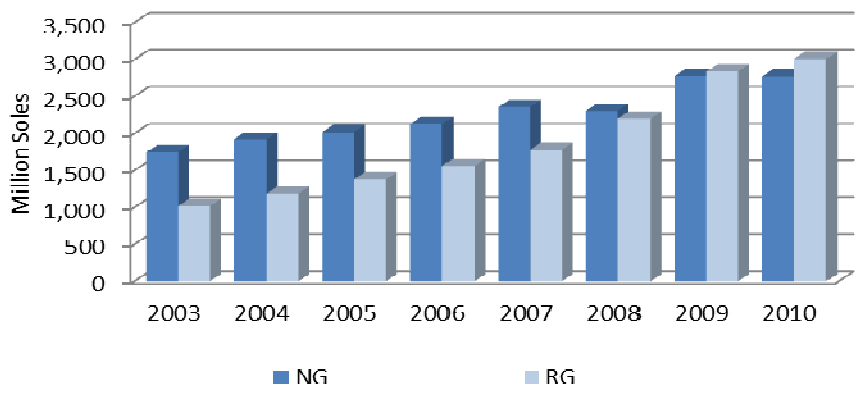
Chart 2



Having described the financing scheme, the first finding is that health expenses have increased significantly during the last years in both government levels, even though proportionally there has been a greater increase in the RG´s. For example, during 2003 health expenses in the RG´s totaled S/. 1018 million, while during 2010 the expenses of NG institutions totaled S/. 3008 million, a 195% increase. Moreover, during 2003 the expenses of NG institutions totaled S/. 1747 million, while during 2010 the expenses increased to S/. 2771 million, a 59% increase. (chart 3)

This can be explained by the growth of the Peruvian economy during the last decade, which has made possible for public institutions to manage more resources. It is important to mention that the percentage representing health expenses with regards to the GDP has not increased and is, approximately, 4.9% of the domestic product. Although public expense on health has greatly increased, especially in the regions, health expenses as percentage of the domestic product has remain the same.

Chart 3
Health expenses according to government levels



The second relevant finding is that the total increase of resources for the health sector (S/. 3014 million), the 66% were assigned to the regional level, thus showing that the distribution of the country´s new resources was oriented to RG´s. According to this numbers, it seems that this result helps the decentralization process meaning that the RG´s will manage more resources but also will make decisions regarding them. Nevertheless, it is necessary to further analyze given that this increment by type of source and resource assignor means that one third (21% of 66%) is still determined by the central level, by the MEF – MINSA (PbP) and MINSA (SIS), respectively.

Table 1

Health expenses according to government levels and type of expenditure

	Total					increment			Structure increment		
	2003	2010	increment	%	Structure increment	Pliego	SIS	PpR	Pliego	SIS	PpR
Total	**2,765**	**5,779**	**3,014**	**109%**	**100%**						
NG	**1,747**	**2,771**	**1,024**	**59%**	**34%**						
Distribution	*63%*	*48%*									
Central Administration											
Current expenses											
Goods and services	293	503	210	72%	7%						
Capital expenses	69	270	201	291%	7%						
Specialized Institutes and National Hospitals											
Personnel and social benefits	382	549	167	44%	6%						
Goods and services	298	507	209	70%	7%						
RG	**1,018**	**3,008**	**1,990**	**195%**	**66%**	1344	184	462	**45%**	**6%**	**15%**
Distribution	*37%*	*52%*									
Current expenses											
Personnel and social benefits	596	1,415	819	137%	27%	576	0	243	19%	0%	8%
Goods and services	360	990	630	175%	21%	279	149	202	9%	5%	7%
Capital expenses	34	464	430	1265%	14%	411	2	17	14%	0%	1%

2.1. National government institutions health expenses

The Health Sector is made of different bodies and executing units that need to be classified given that they have different roles and functions. Specially, those institutions have financing functions and the institutions with the function to provide services. Also, there are institutions having national level and others being subnational that have not been decentralized until now. Moreover, a differentiation can be made between service providers in the national scope (national hospitals and specialized institutions) and Lima Metropolitana service providers (DISAS, networks and local hospitals). As it is known, while the decentralization process continues the last ones shall be decentralized and transferred to the Provincial Municipality of Lima for their administration and budget management.

Sub-table 1
National Government Expense on Health

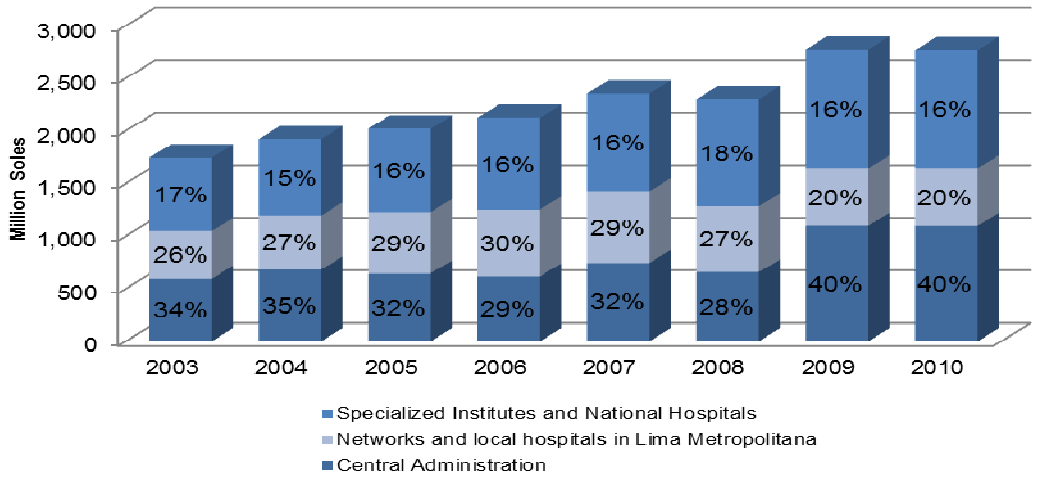
Typology	Definition	Participation of Execution Units
Central Administration	These are the institutions in charge of MINSA having supervision, financing and support functions to service the operations of providers.	MINSA´s headquarters, Programa de Apoyo a la Reforma del Sector Salud (PARSALUD), Instituto Nacional de Salud (INS)[3], Seguro Integral de Salud (SIS), Superintendencia Nacional de Aseguramiento en Salud (SUNASA)[4] and; institutions that operated during the analysis period 2003-2010 as el Instituto de Desarrollo de Recursos Humanos (IDREH) and el Programa de Administración de Acuerdos de Gestión (PAAG).
Specialized Institutes and National Hospitals	These are health facilities having high complexity and are referral points for nationwide patients. From a decentralized point of view, its management should be national[5]	Instituto Nacional de Enfermedades Neoplásicas (INEN)[6], Instituto Nacional de Salud Mental, Instituto Nacional de Ciencias Neurológicas, Instituto Nacional de Oftalmología, Instituto Nacional de Rehabilitación, Instituto Nacional De Salud Del Niño, Instituto Nacional Materno Perinatal Hospital Nacional Hipólito Unanue, Hospital Sergio Bernales, Hospital Cayetano Heredia, Hospital de Apoyo Departamental Maria Auxiliadora, Hospital Nacional Arzobispo Loayza, Hospital Nacional Dos de Mayo, Hospital de Emergencias Casimiro Ulloa, Hospital de Emergencias Pediátricas, Hospital Nacional Victor Larco Herrera, Hospital Nacional Docente Madre Niño - San Bartolomé
Networks and local hospitals in Lima Metropolitana	These are health facilities whose administration is currently under MINSA but are the competency of the	Dirección de Salud IV Lima Este, Hospital Hermilio Valdizán, Dirección de Salud II Lima Sur, Dirección de Salud V Lima Ciudad, Hospital de Apoyo Santa Rosa, Hospital Puente Piedra y Servicios Básicos de Salud,

[3] Included the financing of the Vigía Project.
[4] Created on the basis of the Superintendencia de Entidades Prestadoras de Salud (SEPS).
[5] Nevertheless, it is important to note that during the transfer process the administration of the Hospital Daniel Alcides Carrión was handed to the RG of Callao, being this a national referral facility.
[6] It is important to mention that this is the only service provider institution of MINSA having a budgetary bill having more independence for its operation.

	Provincial Municipality of Lima given the functions of the RG over this facility in this territory.	Hospital Jose Agurto Tello de Chosica, Red de Salud San Juan De Lurigancho, Red de Salud Tupac Amaru, Red de Servicios de Salud " Barranco-Chorrillos-Surco", Red de Servicios De Salud San Juan De Miraflores-Villa Maria Del Triunfo, Red de Servicios de Salud Villa El Salvador - Lurín - Pachacamac - Pucusana, Hospital San Juan de Lurigancho, Hospital Vitarte, Red de Salud Lima Ciudad

Chart 4 shows the expense composition of the NG according to public institutions pertaining to this government level. Thus, during 2003 the institutions pertaining to the Central Administration managed a greater amount of resources (34%), followed in importance by the expenses of DISAS, networks and hospitals in Lima Metropolitana (26%) and, finally, expenses of national hospitals and specialized facilities (17%). Currently, the composition is different, central administration manages 40% of resources, while DISAS, networks and hospitals in Lima manage only 20%.

Chart 4
National Government institutions expense on health



The numbers reflect a differentiated growth among different type of institutions pertaining to the NG. The expenses of the central administration in the amount S/. 593 million during 2003 increased to S/. 1097 million during 2010 (85% increase). National institutes and hospitals have also registered a significant increase from S/. 698 million to S/. 1126 million (61% increase). While health directorates and networks in Lima registered a lower growth (20%), from S/. 455 million to S/. 547 million.

This finding doesn´t seem coherent with the decentralization process, by which it is expected that Central Administration expenses should be proportionally lower in order to make possible for decentralized service providers an increase on their expense percentage.

The last can be explained given that an important amount of resources managed by MINSA were handed to Lima and Callao RG´s between 2008 and 2009, respectively, during the transfer of functions and competencies. On 2008 there was a transfer process by which MINSA transferred to the RG´s S/. 182 million to finance a set of functions.

Sub-table 2
Resource transfer to RG´s of Lima and Callao

When RG´s were created in 2003, in those regions having Comités Transitorios de Administración Regional - CTAR, (Regional Administration Transitory Committees), that is, in those regions already having a level of resource decentralization the decision was made to leave those resources managed by CTAR in the new RG´s. Lima and Callao CTAR´s did not managed the payment to teachers nor to health sector public officers, so this expense continued to be managed by the Ministry of Health. As part of the functions and competencies transfer process from MINSA to the RG´s, resource transfer was effective, mainly payroll payments from MINSA to RG Lima during 2008, and Callao during 2009. The amounts executed by the new execution units of RG Lima were S/. 132 million, while in RG Callao were S/. 165 million (see details).

Transfer to the RG (*)	**Execution Units**	**Amount(*)** (Million S/.)
Callao	Dirección de Salud I Callao, Hospital Daniel Alcides Carrión, Hospital de Apoyo San Jose	S/.165
Lima Provinces	Servicios Básicos De Salud Cañete-Yauyos, Hospital de Apoyo Rezola, Dirección De Salud III Lima Norte, Hospital Huacho - Huaura - Oyon y Servicios Básicos de Salud, Hospital Chancay y Servicios Básicos de Salud, Servicios Básicos de Salud Chilca-Mala, Hospital Huaral and Servicios Básicos de Salud.	S/. 132
(*) In the case of Lima Provinces the amount corresponds to 2008. In the case of RG Callao the amount corresponds to 2009		

Nevertheless, it is important to mention that the Central Administration expense has continue to increase.

When analyzing by expense groups it is verified that the increase in the three types of institutions has occurred mainly in three items: (i) personnel and social benefits, (ii) goods and services (iii) purchase of non-financial assets.

Expenses of institutions pertaining to the Central Administration

The expenses of Central Administration institutions have increased significantly between 2003 and 2010. As a whole, current expenses have increased 58%, while capital expenditures 291%; that is, the increment is explained by an increase on investments which are still centralized.

Table 2 Expenses of institutions pertaining to the Central Administration (Million Soles)								
Expenses group	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Personnel and social benefits	137	107	117	128	150	186	194	194
Pensions and other social benefits	0	0	0	0	0	0	46	28
Goods and services	293	290	321	341	444	343	490	503
Other current expenses	94	181	74	72	10	42	158	101
Total current expenses	**524**	**578**	**513**	**541**	**605**	**570**	**888**	**827**
Capital Donations and Capital transfers	0	0	0	0	0	0	36	0
Investments	64	94	125	59	83	47	175	270
Other capital expenses	5	8	6	16	57	37	0	0
Total capital expenses	**69**	**102**	**131**	**75**	**140**	**84**	**211**	**270**
Total	**593**	**681**	**644**	**616**	**744**	**655**	**1,099**	**1,097**

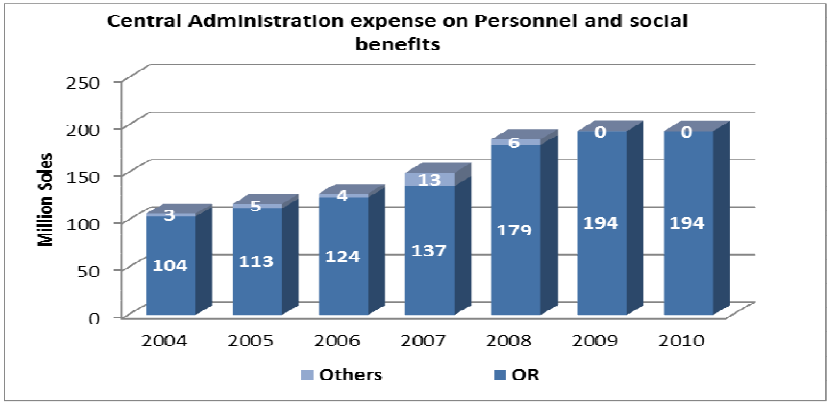
Additionally, personnel and social benefits expenses which are almost totally financed by OR were incremented to S/. 57 million, most of this increment occurred during 2008 and is related to coverage extension of the "Servicio Rural Urbano Marginal" – SERUM (Rural Urban Marginal Service) authorized by Law No. 29035 and managed by MINSA nationwide in poor and extremely-poor areas.

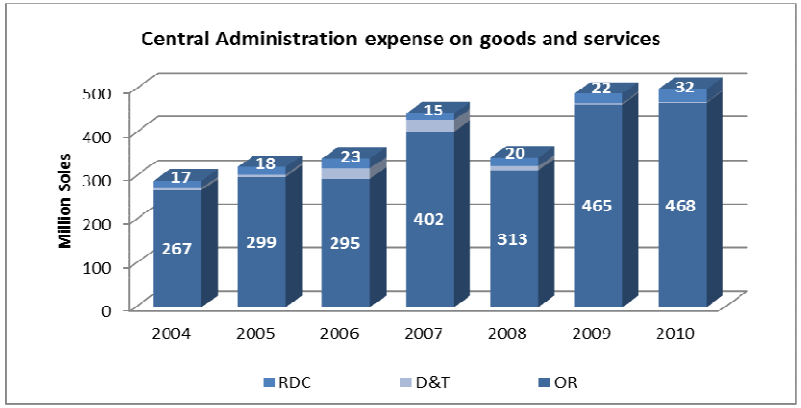
The Central Administration investment expenditures have increased proportionally more. Between 2004 and 2006 a significant amount of the investment expenditure was financed through debt resources by the PARSALUD Project which was funded by a World Bank loan, or donations of the Vigía Project, a USAID donation. During the last years, OR´s are financing most of the investment, having had an increment between 2009 and 2010. Most of the resources have been assigned to the "Nuevo Instituto Nacional de Salud del Niño" Project and for hospitals in the Region Ica (Strengthening of the Resolutive Capacity of Health Services in the Regional Hospital of Ica and Infrastructure Reconstruction and improvement of resolutive capacity of health services in the Santa María del Socorro Hospital), investment expenses centralized by MINSA.

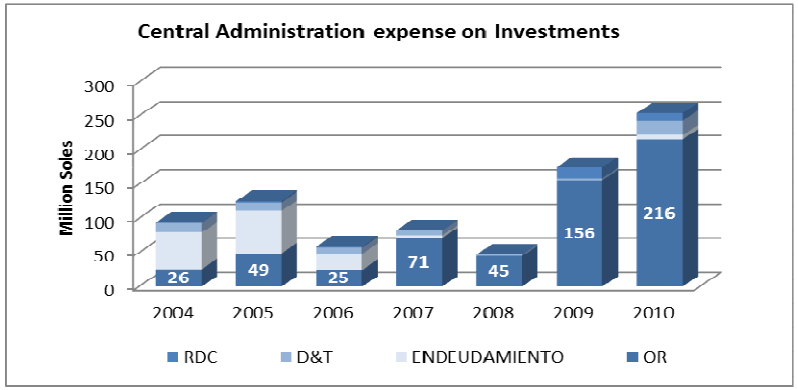
Finally, the expense on goods and services had an increment of 72% during the period 2003-2010. As mentioned before, during 2008 there was a decrease compared to the previous year due to functions transfer from the NG to the RG´s, within the decentralization process framework. For the years 2009 and 2010 there is a strong increment explained by the assignment of more resources to service several interventions on vaccines: (i) normal program (BCG, polio, measles, etc.), (ii) Hexavalent vaccine (DPT,HB,HIB Polio), (iii) pneumococcal and rotavirus, (iv) hepatitis A, pediatric influenza south, (v) adult influenza south hemisphere, etc.

Chart 5

Central Administration expense by finance sources







Expenses of specialized institutes and national hospitals

In a similar manner, the expenses of specialized institutes and national hospitals also had a significant increment between 2003 and 2010. Current expenses as a whole had an increment of 54%, an additional S/. 370 million. Non-existing capital expenditures during previous years started to be important.

Personnel payroll had an increment of S/. 167 million between 2003 and 2008; this growth was sustained during all these years. Some particulars to highlight is that this expense item funding has an important RDC source component financing 13% of the expense.

On average, the expense on goods and services is financed 48% by OR, 38% by RDC and 14% by D&T. This expense has been incremented to S/. 209 million between 2003 and 2010. All finance sources have shown an important increase.

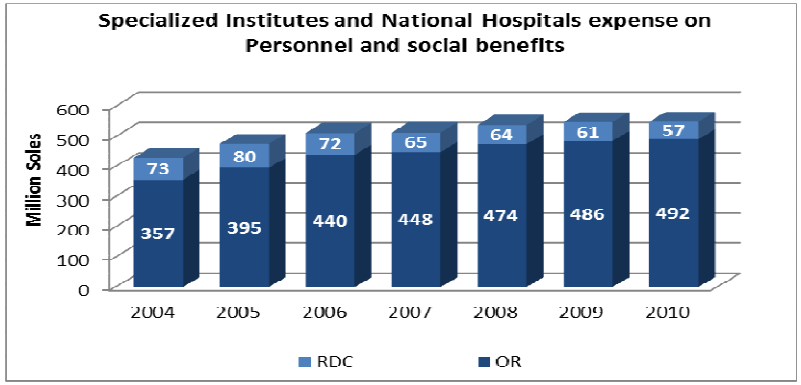
Regarding investment expenditures, there was a significant increase during 2009 and 2010, mainly financed by the OR source.

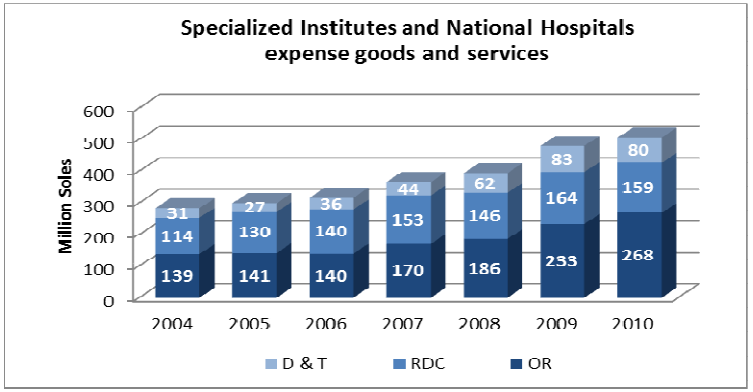
Table 3
Expenses of specialized institutes and national hospitals

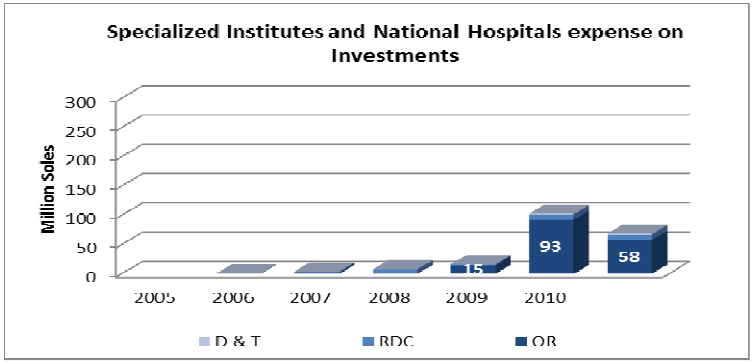
Expenses group	2003	2004	2005	2006	2007	2008	2009	2010
Personnel and social benefits	382	430	475	512	514	538	547	549
Pensions and other social benefits	0	0	0	0	0	0	2	0
Goods and services	298	284	299	316	366	394	480	507
Other current expenses	9	0	0	1	1	0	1	2
Total current expenses	**688**	**714**	**775**	**829**	**881**	**932**	**1,030**	**1,057**
Investments	0	0	1	4	8	17	103	69
Other capital expenses	10	13	17	39	42	72	0	0
Total capital expenses	**10**	**13**	**18**	**43**	**50**	**89**	**103**	**69**
Total	**698**	**727**	**793**	**872**	**931**	**1,021**	**1,132**	**1,126**

Chart 6

Specialized Institutes and National Hospitals expense by finance sources







The expenses of health directorates, networks and hospitals in Lima Metropolitana

Not quite precisely, the figures show that expenses of DISA, networks and hospitals in Lima have increased but in a minimum proportion. For the period 2003 – 2010 current expenses as a whole had an 18% increase, an additional S/. 80 million. Capital expenditures almost do not exist in these institutions.

Ninety-three percent (93%) of the payroll is financed by the OR source and the entire expense item had an increase of only S/. 50 million between 2003 and 2010. Between 2007 and 2008, the expense on this item decreased S/. 39 million, which is explained by the Lima Provinces and Callao facilities resource transfer to their respective RG´s for their administration during that year. The same trend is shown in the item goods and services.

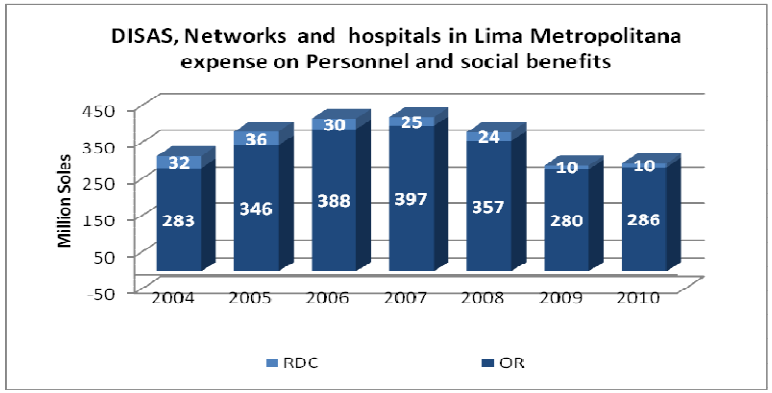
Investment expenditures increased during the last four years due to equipment purchases (furniture, medical equipment, balances, etc).

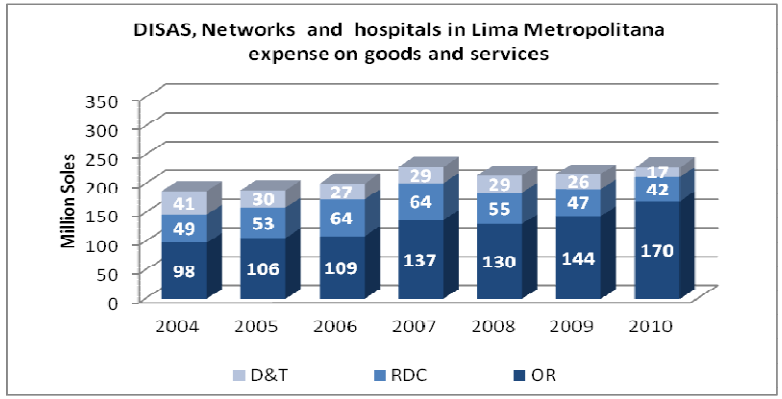
Table 4
Expenses of health directorates, networks and hospitals in Lima Metropolitana

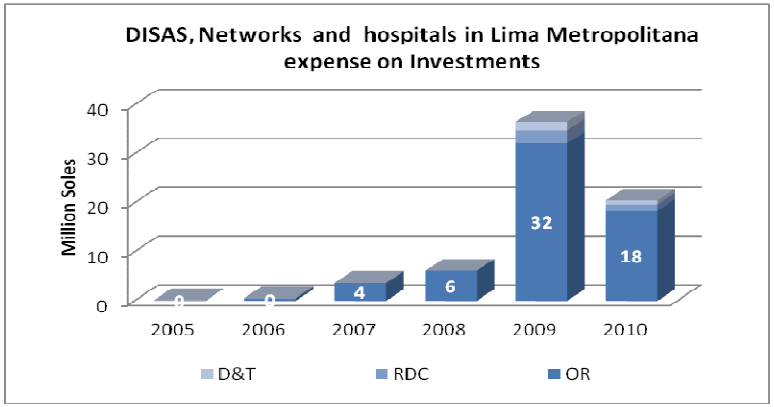
Expenses group	2003	2004	2005	2006	2007	2008	2009	2010
Personnel and social benefits	246	315	382	418	422	381	291	296
Pensions and other social benefits	0	0	0	0	0	0	0	0
Goods and services	193	188	189	201	230	214	217	229
Other current expenses	7	0	1	2	1	1	1	2
Total current expenses	**447**	**503**	**572**	**622**	**653**	**596**	**509**	**527**
Investments	0	0	0	1	4	6	37	21
Other capital expenses	8	12	12	16	25	26	0	0
Total capital expenses	**8**	**12**	**12**	**16**	**28**	**32**	**37**	**21**
Total	**455**	**515**	**584**	**638**	**681**	**628**	**545**	**547**

Chart 7

DISAs, Networks and Hospitals in Lima Metropolitana expense by finance sources







2.2. Regional Governments health expenses

Evidently, RG´s have increased in a greater proportion their expenses on health when compared to NG´s health sector institutions. Current expenses as a whole had an increment of 160%, while capital expenditures during 2010 were almost 13% more than during 2003. (Table 5)

Personnel and social benefits expenses are almost totally financed by the OR source. This item had an increment of 137%. Besides the transfer of resources during 2008 to the Lima Provinces and Callao RG´s and the transfer of resources for functions and competencies in charge of RG´s, the increment is explained as follows:

- ✓ An increase for the payment of AETAS and productivity to health personnel. The Emergency Degree Nº 013-2009, enacted on January 29, 2009, established that Regional Governments shall pay up to 6 AETAS and productivity bonus to Health Sector Personnel[7].
- ✓ The inclusion of contract process costs for health professionals hired under the modality of non-personal services under Law Nº 28498, nationwide.

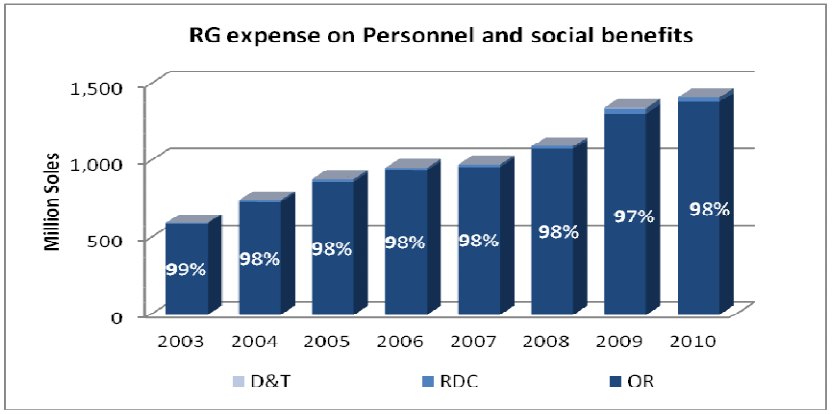
Table 5
Expenses of Regional government in Health

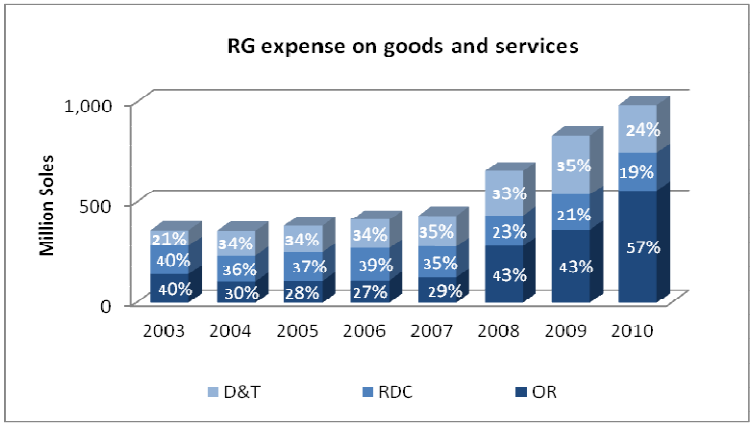
Expenses group	2003	2004	2005	2006	2007	2008	2009	2010
Personnel and social benefits	596	744	881	956	978	1,096	1,347	1,415
Pensions and other social benefits	0	0	0	0	0	0	1	2
Goods and services	360	359	386	416	437	660	839	990
Donations and transfers	0	0	0	0	0	0	0	0
Other current expenses	28	36	48	50	118	129	151	138
Total current expenses	**984**	**1,139**	**1,315**	**1,423**	**1,533**	**1,886**	**2,339**	**2,545**
Donations and transfers	0	0	0	0	0	0	2	62
Other capital expenses	15	23	30	32	30	56	0	0
Investments	19	26	35	106	216	256	498	402
Total capital expenses	**34**	**49**	**65**	**138**	**246**	**312**	**500**	**464**
Total	**1,018**	**1,188**	**1,380**	**1,561**	**1,778**	**2,198**	**2,839**	**3,008**

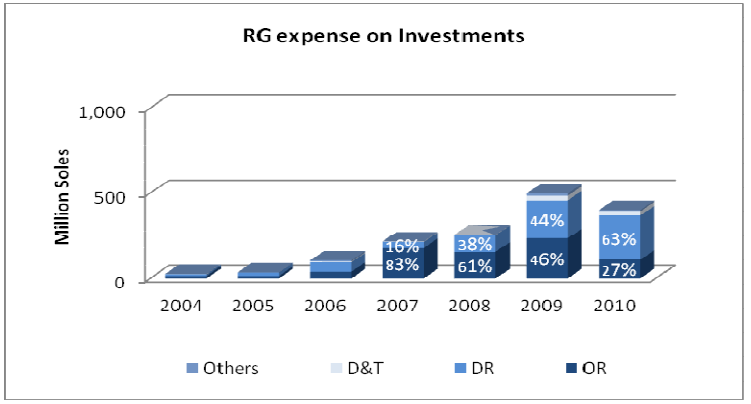
[7] It was established that their financing is structured as follows: i) 2 AETAS and 4 Productivity in carge of the MEF, i) 2 AETAS in charge of MINSA and ii) 2 AETAS and 2 Productivity in charge of each Regional Government, the last that were not financed. During 2010 these AETAS were financed with OR to avoid differences among RG´s.

Chart 8

Regional Governments expense by finance sources







The expenses on goods and services had an increment of 175% during 2003 – 2010, which meant an increment of S/. 630 million for all RG´s. As shown in chart 8, the increment of these expenses has been linked to an increase on OR source funds given the priority on infrastructure maintenance and restoration of health facilities and various expenses for financing *Programas Estratégicos de Presupuesto por Resultados* (Budget by Results Strategic Programs), such as comprehensive health service to excluded and scattered populations (AISPED) through traveling brigades. Although in a lesser degree, the increment has been explained due to more resources received by operational units as reimbursements from the SIS.

The health investment expenditures of RG´s, as shown in the statistics, have considerably increased during the last years. The two sources having an increment are OR and DR, which have different dynamics and explanation for their increase.

In the case of the OR source, the increase is due to the budgetary priority given by the Administration of President Garcia to investment expenditures, that when assigned by the MEF for health purposes, were related to funds for building hospitals and investment priorities expressed by the PpR´s. This explains the great amount of funds for macro-regional blood donation centers, hemotheraphy centers and blood banks, expenses related to the strategic Mother-Child Health Program (SMN) because hemorrhage is the first cause of mortality in pregnant women. Also, funds were allocated for the purchase of balances and kitchen kits which are key components of the CRED operation.

In the case of the DR source, the increase is explained by the decision of some RG´s to provide part of their resources from the Canon, over which they have self determination, for investments on health issues. The priority of this expense has been on hospital funding.

2.3. Policies that explain the increase of public expenses on health

Briefly these are the reasons why there has been an increase on health resources both for RG´s and the NG.

a. ***The increase on personnel expenses.*** Particularly in RG´s for the amount of S/. 890 million and basically explained by:
   - ✓ Increase in the number of hired personnel.
   - ✓ Increase due to AETAS payment and productivity bonus to health personnel.
   - ✓ Cost of health personnel hiring process under the modality of non-personal services.

b. ***An increase on fund allocation to strategic budgetary programs (PPE), Budget by Results.*** Since 2008 in the health sector are operating two PPE´s: Programa Articulado Nutricional - PAN (Comprehensive Nutrition Program) and Salud Materno Neonatal – SMN (Mother-Child Health Program). Most of the additional funds provided for health during the last three years were channeled through these PPE´s, mainly

PAN. Table 6 shows that the expenses of PPE´s increased from S/. 672 million during 2008 to S/. 1145 million during 2010. This increase represented also a change in the expense composition of PPE´s on total health expenses. During 2008, PPE´s expenses represented 15% of total health expenses, while during 2010 said percentage increased 20%.

Table 6
Health expense differentiated by strategic programs
(S/. in Millions)

Strategic budgetary programs	government levels	2008	2009	2010
PAN	NG	181	257	392
	RG	132	199	337
	Total PAN	**313**	**456**	**729**
SMN	NG	197	147	176
	RG	162	241	240
	Total SMN	**359**	**388**	**416**
PAN + SMN	NG	378	404	569
	RG	294	440	576
	Total PPE	**672**	**844**	**1,145**
Health expense	NG	2,303	2,777	2,771
	RG	2,198	2,839	3,008
	Total	**4,501**	**5,616**	**5,779**
PPE´s expenses represented	NG	16%	15%	21%
	RG	13%	15%	19%
	Total	**15%**	**15%**	**20%**

Table 7 shows PPE´s resources for PpR in the case of MINSA are centered on current expenses and used to cover goods and services items (vaccines) and other expenses. Also, there are resources for materials and medical inputs purchase and for resolution capacity improvement projects for health centers in order to provide comprehensive services to women (pregnant, in-labor and breast-feeding mothers), children under three years of age in different regions of the country by PARSALUD. Fifty-five percent (55%) of the central administration expenses on goods and services is managed through the PPE´s. In the case of service providers, the importance of donations and transfer sources is highlighted, corresponding to SIS reimbursements, for PpR´s financing, mainly in RG´s, where 23% of PPE´s resources are financed by that source. SIS has an amount of resources that must be transferred to PPE´s because those funds have been allocated for those expense chains.

Table 7

Expenditure distribution of Strategic Budget Programs (PAN and SMM) according to expense group and funding source: 2010

Central Administration

Expenses group	Source				
	OR	RDC	D&T	DR	Total
Personnel and social benefits	0%	0%	0%	0%	0%
Pensions and other social benefits	2%	0%	0%	0%	2%
Goods and services	73%	1%	0%	0%	74%
Donations and transfers	0%	0%	0%	0%	0%
Other current expenses	13%	0%	0%	0%	13%
Total current expenses	**88%**	**1%**	**0%**	**0%**	**88%**
Investments	6%	0%	0%	4%	12%
Other capital expenses	0%	0%	0%	0%	0%
Total capital expenses	**6%**	**0%**	**0%**	**4%**	**12%**
Total	**93%**	**1%**	**0%**	**4%**	**100%**
Million Soles	**354**	**2**	**0**	**16**	**379**

Specialized Institutes and National Hospitals

Grupo de gasto	Source				
	OR	RDC	D&T	DR	Total
Personnel and social benefits	57%	3%	0%	0%	60%
Pensions and other social benefits	0%	0%	0%	0%	0%
Goods and services	17%	3%	10%	0%	30%
Donations and transfers	0%	0%	0%	0%	0%
Other current expenses	0%	0%	0%	0%	0%
Total current expenses	**74%**	**6%**	**10%**	**0%**	**90%**
Investments	9%	0%	1%	0%	0
Other capital expenses	0%	0%	0%	0%	0
Total capital expenses	**9%**	**0%**	**1%**	**0%**	**10%**
Total	**83%**	**6%**	**11%**	**0%**	**100%**
Million Soles	**79**	**6**	**10**	**0**	**96**

DISAS, Networks and hospitals in Lima Metropolitana

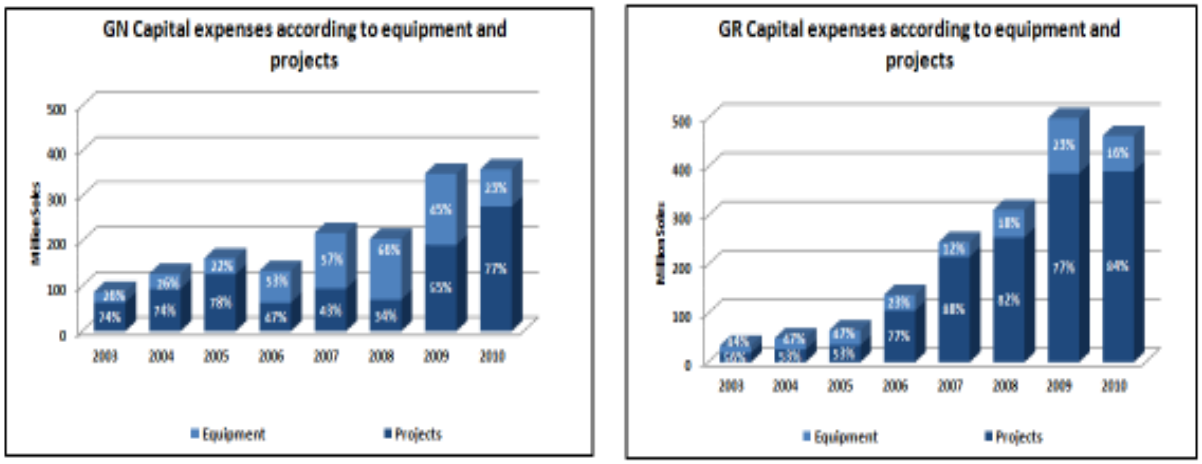
Grupo de gasto	Source				
	OR	RDC	D&T	DR	Total
Personnel and social benefits	44%	1%	0%	0%	45%
Pensions and other social benefits	0%	0%	0%	0%	0%
Goods and services	37%	4%	7%	0%	48%
Donations and transfers	0%	0%	0%	0%	0%
Other current expenses	0%	0%	0%	0%	0%
Total current expenses	**81%**	**4%**	**7%**	**0%**	**93%**
Investments	7%	0%	0%	0%	7%
Other capital expenses	0%	0%	0%	0%	0%
Total capital expenses	**7%**	**0%**	**0%**	**0%**	**7%**
Total	**88%**	**4%**	**7%**	**0%**	**100%**
Million Soles	**83**	**4**	**7**	**0**	**94**

RG

Grupo de gasto	Source				
	OR	RDC	D&T	DR	Total
Personnel and social benefits	42%	0%	0%	0%	42%
Pensions and other social benefits	0%	0%	0%	0%	0%
Goods and services	31%	1%	19%	0%	52%
Donations and transfers	0%	0%	0%	0%	0%
Other current expenses	0%	0%	3%	0%	3%
Total current expenses	**73%**	**2%**	**22%**	**0%**	**97%**
Investments	2%	0%	1%	0%	3%
Other capital expenses	0%	0%	0%	0%	0%
Total capital expenses	**2%**	**0%**	**1%**	**0%**	**3%**
Total	**75%**	**2%**	**23%**	**0%**	**100%**
Million Soles	**434**	**11**	**131**	**0**	**576**

c. ***Capital expenditures increase.*** Chart 9 shows that investment expenditures not only includes public investment projects (PIP) but also equipment[8], and both items have increased significantly. In the case of PIP´s, priority has been given to building hospitals; in the case of equipment, materials and medical inputs related to service the PPE´s of the PpR.

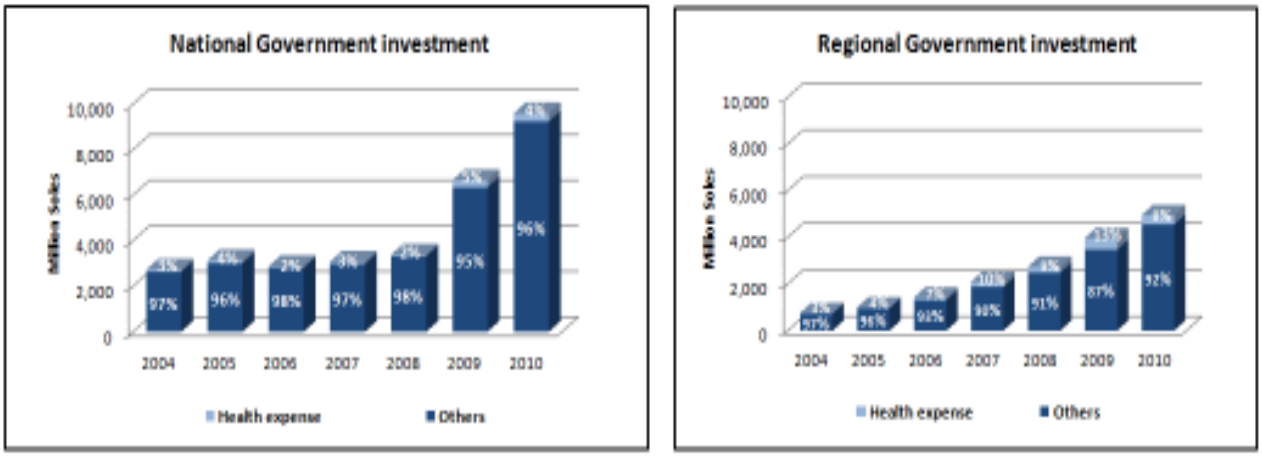
Chart 9



It is important to mention that compared to the NG where investments are funded mainly with OR, in the RG´s an important amount of this investment is funded by earmarked resources (ER); RG´s income from the Canon is earmarked exclusively by RG´s. Thus, it is necessary to analyze the budgetary importance given to health issues by the RG´s. Chart 10 shows that the expense of health investment has been improving proportionally. During 2004, the expense on health investment represented only 3% of the total investment of RG´s; during 2010 it represented 8% and during 2009, 13%, showing a growing trend. Although the health expense increased significantly, in the case of the NG it represents a 4% average of the total investment.

[8] These expenses are considered in the budgetary classification as activities.

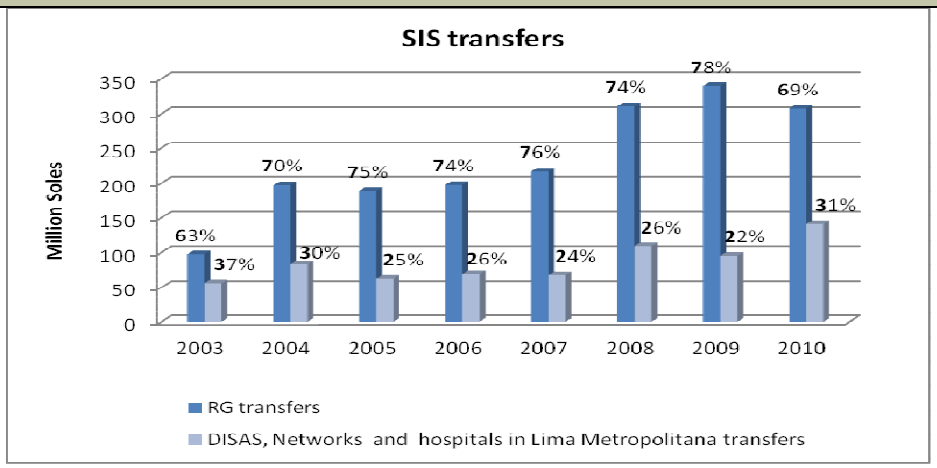
Chart 10



d. ***And in a lesser degree coverage increase of the Seguro Integral de Salud – SIS (Comprehensive Health Insurance).*** When the SIS started operations on 2002, public financing focused on poor pregnant women and children according to a mother-child benefit plan. During 2007, SIS´s target population expanded to all age groups of the poor population and new services were included in the benefit plan, expressed in the Prioritized List of Sanitary Interventions (LPIS). During the present year, access to SIS was also extended to other population groups such as moto-taxi drivers, tricycle drivers, public transportation drivers by means of a semi-contributive insurance. The number of affiliates to the SIS increased from 5.5 million during 2004 to 11 million during 2011.[9] The budget increase has not compensated the increase effect given the number of affiliates, which has caused a reduction in per capita financing. It is estimated that per capita expense was S/. 53.3 per year during 2004, while it was S/. 41.8 during 2009.

[9] Madueño, Miguel (2011). Convergency to universal coverage. Changes in the performance of the health financing system in Peru: 2000-2009

Chart 11


SIS transfers
Million Soles
350
300
250
200
150
100
50
0
63%
37%
70%
30%
75%
25%
74%
26%
76%
24%
74%
26%
78%
22%
69%
31%
2003
2004
2005
2006
2007
2008
2009
2010
RG transfers
DISAS, Networks and hospitals in Lima Metropolitana transfers

3. Adequacy analysis for resource allocation to RG´s

The previous section has shown that RG´s have increased significantly the resources they manage to provide health services. The question to be answered in this section is the following: If those resources are enough given the functions and competencies allocated and transferred to the RG´s, especially on health issues?

This question is very difficult to answer because it is necessary to know: i) How much the State really expends on a jurisdiction level in the assessed target function, and ii) Which are the financing requirements to service expense needs in these jurisdictions for the analyzed function, for which it is necessary to estimate the unit cost of providing a good or service of minimum quality to assure similar treatment for all citizens, regardless of their location[10].

The difficulty is that the classification of functions and programs on the Public Budget through SIAF does not relate to the functions and competencies classification under organic laws and function regulations on State institutions. It is very difficult to establish the necessary criteria to maintain fiscal neutrality, because it is impossible the correct calculation of resources to be transferred according to the functions to be decentralized.[11] Also, it is complicated to get unit costs for the provision of a good or service given that it is necessary a very complex data and analysis study.

Due to these restrictions, it is proposed to have a proxy variable in order to analyze the adequacy of resources transferred for the "Paquete Esencial de Aseguramiento en Salud" - PEAS (Health Insurance Basic Package) for which a yearly per capita cost was estimated. The current budget for PEAS can be estimated by some expenses identified in the SIEF and related to individual health sub-programs. PEAS´s unit cost has been calculated based on medical procedures and the real cost of the current operation. The unit cost is estimated in S/. 364 per capita yearly.

[10] Regional Governments National Assembly "Technical-Legal Proposal for Fiscal Decentralization". Debate Minutes N° 4. Pág. 18.

[11] idem.

Table 8
Comparative analysis between current financing allocated to RG´s and resources necessary for adequate service provision

Regional Government	RG expense on individual health				Comparative analysis		
	RG	SIS Transfer. Tarifada	MINSA(*)	Total	SIS beneficiaries	Demand	Deficit
	(Thousands Soles)					(Thousands Soles)	
Amazonas	28,368	8,585	7,043	43,995	336,789	122,591	-78,596
Ancash	84,614	16,593	10,467	111,675	607,208	221,024	-109,349
Apurimac	52,013	9,375	7,059	68,447	368,116	133,994	-65,547
Arequipa	112,594	9,478	10,522	132,594	296,799	108,035	24,559
Ayacucho	68,674	14,112	8,589	91,374	533,420	194,165	-102,791
Cajamarca	64,575	14,850	14,861	94,286	1,159,430	422,033	-327,747
Cusco	72,539	14,296	12,128	98,963	838,066	305,056	-206,093
Huancavelica	35,212	21,368	6,350	62,930	407,882	148,469	-85,539
Huanuco	60,816	23,573	8,206	92,595	760,009	276,643	-184,048
Ica	63,173	6,687	7,856	77,717	158,285	57,616	20,101
Junin	90,610	20,322	12,021	122,952	468,838	170,657	-47,705
La Libertad	92,903	4,240	13,454	110,597	817,569	297,595	-186,998
Lambayeque	43,437	10,991	11,197	65,625	471,327	171,563	-105,938
Loreto	66,939	20,932	10,434	98,305	829,732	302,022	-203,717
Madre de Dios	23,402	13,733	595	37,730	45,881	16,701	21,029
Moquegua	25,694	23,547	805	50,047	35,523	12,930	37,117
Pasco	25,420	779	1,814	28,014	122,147	44,462	-16,448
Piura	88,190	1,148	13,740	103,079	935,914	340,673	-237,594
Puno	109,535	2,741	11,560	123,836	606,016	220,590	-96,754
San Martin	43,912	17,064	7,511	68,487	528,758	192,468	-123,981
Tacna	37,645	12,364	2,639	52,648	46,928	17,082	35,566
Tumbes	18,694	12,651	1,053	32,398	88,331	32,152	246
Ucayali	26,149	2,922	5,144	34,215	280,790	102,208	-67,993
Callao	106,583	5,726	7,167	119,476	201,692	73,416	46,060
Total	**1,441,691**	**288,077**	**192,215**	**1,921,985**	**10,945,450**	**3,984,145**	**-2,062,160**

Fuente: Consulta amigable SIAF SP. Elaboracion propia
*Vaccine

This simple calculation shows that in order to service SIS´s current beneficiary population, given the quality and opportunity standards proposed by PEAS, the deficit is estimated in S/. 2,062 million. It is also obvious that table 7 shows the current finance inequity of RG´s. While in the regions of Ica, Arequipa, Madre de Dios and Callao the emphasis must be on a better allocation of their resources, in the rest of the regions there are important deficits to be covered by the State through the Public Treasury.

As of today we have revised in the decentralized context if public resources allocated to RG´s have increased and if these are enough given the functions and competencies on health issues assigned and transferred. Nevertheless, the adequacy does not depend only on the allocated resources but in the resource execution capacity that RG´s have developed during this process. As table 7 shows, there are regions where the problem is not the amount allocated but the purpose of the expense and its execution capacity.

4. Health resources execution capacity according to government levels

The execution capacity of resources must be assessed, mainly those expenses with greater difficulties of execution and demanding more skills from institutions. Current expenses, mainly explained by payroll, have a tendency to be homogeneous throughout the year and have high levels of execution, nearly 100%. Conversely, capital expenditures and some expenses on goods and services are more difficult because their execution has to go through a series of processes, such as the proposal for a public investment project, process regulated by the National System for Public Investment (SNIP), and/or by procurement and contract processes regulated by the State Procurement and Contract Supervision Bureau (OSCE). Thus, this section´s analysis is focused on capital expenditures execution, expenses that must go through both processes in order to be executed.

Usually the institution´s budget management performance has been assessed by the indicator "*Budget execution progress*" which measures the execution capacity of the institution in relation to resources allocated in the yearly budget framework. This indicator is calculated by dividing the executed amount as of December of the analyzed year and the Modified Institutional Budget of the same year. This indicator has limitations because it only analyzes one aspect of the execution capacity of an institution but it does not take into account if the institution has highly increased its expense level from one year to another. It is not the same to execute S/. 84 million than to execute S/. 1266 million, especially if the necessary current expenses for said execution has limitations due to austerity measures or budget restrictions which make impossible an adequate execution.

As table 8 shows, the greater the budget the more difficulties there will be for resource execution. The execution capacity decreased significantly between 2009 and 2010. During 2009 the RG´s as a whole executed 71% of the resources budgeted, while during 2010 only 32%. This also meant a decrease of 19% compared to the investment level of the previous year. The NG central administration also had a decrease on its investment level during this year from an execution of 58% to 51%.

Table 9 also shows the differences throughout the analyzed period. During 2007 and 2008, the execution profile of RG´s was better that those of NG institutions. RG´s executed a greater amount of resources and also increased their investment level.

Table 9
Analysis of expending between the institutions of national government and regional governments (Million S/.)

		2005	2006	2007	2008	2009	2010
NG Central Administration	% Execution	81%	32%	57%	14%	58%	51%
	PIM	155	185	146	347	303	531
	Ejecución	125	59	83	47	175	270
	% increment		-53%	41%	-43%	270%	55%
NG Specialized Institutes and National Hospitals	% Execution	69%	28%	33%	34%	71%	83%
	PIM	1	4	8	17	103	69
	Execution	1	1	3	6	73	57
	% increment		58%	123%	119%	1174%	-21%
NG DISAS, Networks and hospitals in Lima Metropolitana	% Ejecución	24%	13%	15%	32%	72%	64%
	PIM	0	4	25	19	51	32
	Execution	0	1	4	6	37	21
	% increment		382%	557%	65%	496%	-44%
RG Central Administration	% Execution	41%	34%	50%	52%	71%	32%
	PIM	84	312	432	491	705	1266
	Execution	35	106	216	256	498	402
	% increment		203%	105%	18%	95%	-19%

Comparison of investment execution capacity among Regional Governments

From the analysis presented in the previous section, the budget management performance of different Regional Governments will be assessed from a comparative perspective and using two indicators analyzed jointly.[12]

> ***Percentage difference in the budget execution progress:*** It compares the percentage of budget execution reached by an institution in two different years. In operational terms, this indicator is calculated as the percentage difference between the budget execution reached in each period.
>
> ***Increase in the investment resources level:*** It measures the increase in the amount of investment resources managed by an institution. It is positive for an institution to manage a higher level of investment. In this operational manner, the indicator is calculated as the ratio between the amount of executed investments on 2010 and the same amount but on 2009.

The above makes possible a greater richness for the analysis because it includes performance information of the previous year which provides a *benchmark* to compare the execution levels reached on the current year. Based on calculated indicators data, RG´s can be classified in four (4) groups according to their performance results, as follows:

[12] This methodological proposal has been taken from the paper: Paulini, Javier. "La centralización de la descentralización presupuestal" (Centralization of Budget Decentralization). In said paper there is a similar analysis for all expenses of RG´s and LG´s.

	Increased level of investment compared to 2009	Decreased level of investment compared to 2009
More progress in budget execution on 2009	**Group I**	**Group II**
Less progress in budget execution on 2009	**Group III**	**Group IV**

- **Group I** consisting of RG´s having the best results because they have increased their investment level and at the same time have had more capacity in the execution of investment resources compared to 2009.

- **Group II** consisting of RG´s that have decreased their investment level but that have had more capacity in the execution of investment resources compared to 2009.

- **Group III** consisting of RG´s that have increased their investment level but that have had less capacity in the execution of investment resources compared to 2009.

- **Group IV** consisting of RG´s having the worst results due to a decrease in the level of investments and at the same time have had a lesser capacity to execute investment resources compared to 2009.

Table 10 shows that the RG of Lima is the one having the best performance due to an increase on their investment level and, at the same time, has had more capacity for resource execution compared to 2009. Conversely, the RG´s of Callao, Loreto, San Martin, Arequipa, Tacna, Ica, La Libertad, Cajamarca, Cusco, Apurímac, Amazonas, Madre de Dios, Piura, Moquegua, Junín, Huánuco, Ancash, Ayacucho and Lambayeque are the ones having the worst results because at the same time they reduced their investment level, have had a lesser capacity to execute investment resources compared to 2009.

After analyzing both the increase of resources allocated to health expending as well as the adequacy of its execution capacity, the following sections will focus on analyzing the level of horizontal inequity of resources allocated to health among regional governments, in order to determine which regions have a greater resource gap and should be prioritized.

Table 10
Comparison of investment in health by sources of funding

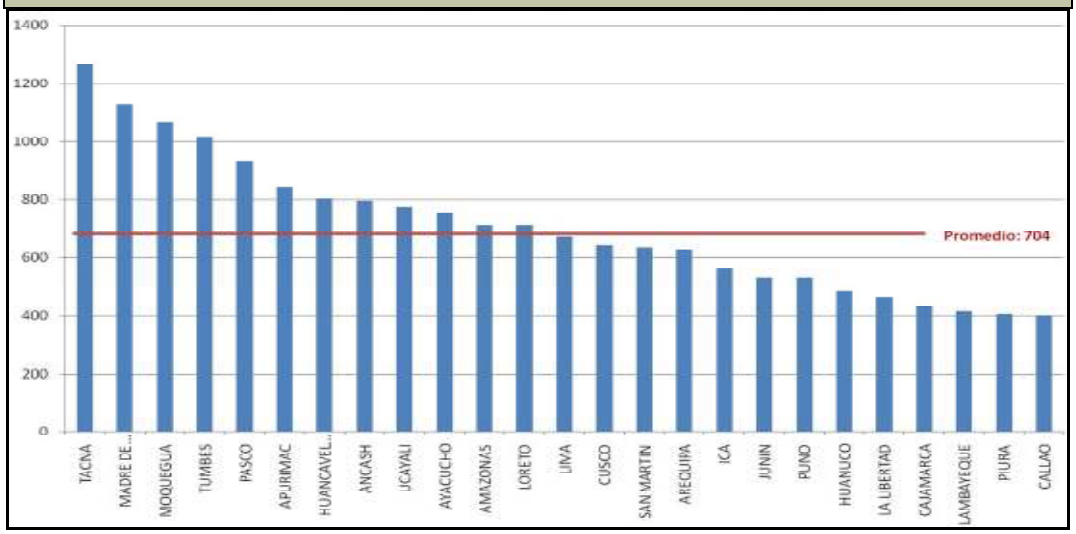
RG	Advance 2009%	Advance 2010%	% difference in execution progress	execution 2009	execution 2010	% difference in execution progress 2010-2009	Group
Lima	39%	46%	7%	10	15	48%	I
Pasco	46%	53%	7%	15	6	-60%	II
Ucayali	64%	66%	2%	12	11	-9%	II
Huancavelica	72%	72%	0%	22	32	42%	III
Tumbes	47%	30%	-17%	2	27	1645%	III
Puno	73%	17%	-56%	12	16	35%	III
Callao	84%	76%	-8%	43	18	-58%	IV
Loreto	72%	63%	-9%	15	9	-37%	IV
San Martin	83%	67%	-16%	11	5	-53%	IV
Arequipa	89%	71%	-18%	25	17	-31%	IV
Tacna	43%	25%	-18%	12	11	-8%	IV
Ica	53%	22%	-31%	4	4	-13%	IV
La Libertad	62%	28%	-34%	16	11	-28%	IV
Cajamarca	84%	49%	-35%	59	45	-24%	IV
Cusco	66%	28%	-38%	42	21	-51%	IV
Apurimac	55%	16%	-39%	16	15	-6%	IV
Amazonas	91%	47%	-44%	15	5	-66%	IV
Madre de Dios	86%	39%	-47%	3	1	-60%	IV
Piura	80%	33%	-47%	14	5	-60%	IV
Moquegua	78%	30%	-48%	31	11	-64%	IV
Junin	74%	21%	-53%	11	3	-68%	IV
Huanuco	82%	21%	-61%	12	6	-49%	IV
Ancash	64%	2%	-62%	33	8	-76%	IV
Ayacucho	75%	12%	-63%	21	8	-59%	IV
Lambayeque	98%	21%	-77%	53	4	-93%	IV
Total	**70%**	**38%**	**-32%**	**509**	**316**	**-38%**	**IV**

Sources: Consulta amigable SIAF SP

5. Horizontal inequity of transfers from NG to RG

Although the level of resource allocation and execution capacity shown by the different RG´s indicates the progress of decentralization, an important variable to take into account is the equity degree of transfers made by the NG to subnational governments. Different studies show that there is a significant horizontal dispersion in per capita transfers to regional governments. On average, the difference among regions receiving a greater or lesser per capita transfer level is 3 to 1, approximately. (Chart 11).

Chart 11
Regional Governments per capita transfers (2008)



Source: MEF. Prepared by MEF.

Also, from a distributive perspective it is not desirable that per capita transfers have a positive relation to the Unsatisfied Basic Needs (NBI) which measures a region or district level of poverty. Nevertheless, transfers received by regional governments originated in Earmarked Resources (mining Canon, oil Canon, mining royalty, FOCAM, etc.) occur only on those areas having extractive activities and without taking into account NBI´s. Additionally, Ordinary Resources transfer established by the MEF did not adequate to the redistributive criteria.

In the study prepared by Arias y Casas[13] a cross-cutting econometric regression was performed to determine the relation between NBI´s and other transfer types to the regions. Consistent with the results shown on Table 11, per capita resources of the Canon, Royalties, etc. have a negative correlation with existing social needs within territorial jurisdictions of different Regional Governments. On the other hand, per capita transfers from Ordinary Resources represent a positive correlation with NBI´s, but this is

[13] See "Fiscal Decentralization Technical-Legal Proposal". Regional Governments National Assembly (ANGR), 2010

too low and not meaningful. Finally, the assessment of the total per capita transfer to the regions shows that its correlation with needs is virtually zero.

Table 11
RG´s per capita transfer correlation with NBI-2008

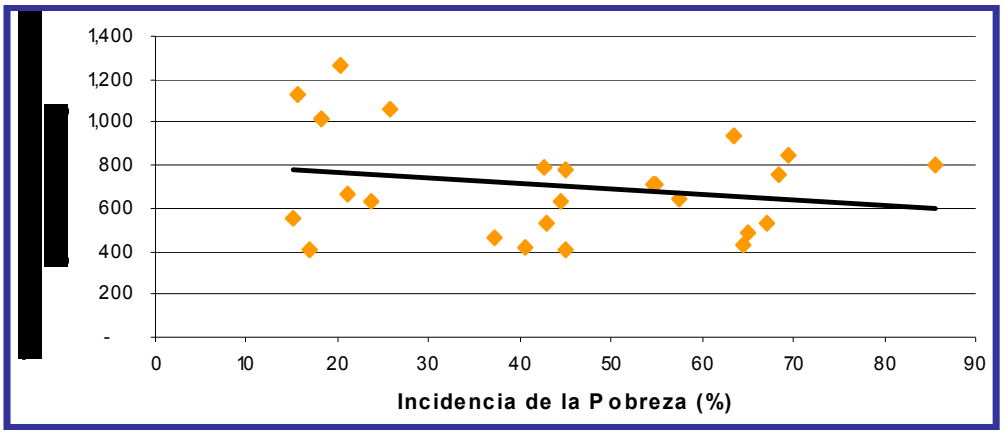
NBI	expected sign	suggested value	coefficient
Canon, Royalties and FOCAM	(+)	X≥0.6	-0.15
OR	(+)	X≥0.6	0.24
Total (excluding Canon, Royalties and FOCAM)	(+)	X≥0.6	0.23
Total	**(+)**	**X≥0.6**	**0.07**

Source: MEF. Prepared by: INDE Consultores

From this study it can be inferred that resource transfer is made in a regressive manner, which means that those regions having low percentages of homes with at least one NBI receive higher amounts of total per capita transfers. Likewise, regions having high percentages of NBI´s receive lower amounts for per capita transfers.

Results are similar when total per capita transfers are assessed compared to the percentages of monetary poverty incidence (see Chart 12). There is a negative correlation between both variables.

Chart 12
Regional Governments per capita transfer amounts vs poverty



Source: MEF. Prepared by INDE

5.1. Inequity in health transfers to RG´s

Transfers received by Regional Governments to address their competencies on health issues may be assessed independently from the equity perspective. Nevertheless, it is necessary to develop specific criteria and indicators, different from the global ones presented previously; that is, they must respond better to the features of health service provision.

Equity in resource distribution to Regional Governments on health is a fundamental objective for the sector´s performance.

In order to assess the equity level of the current finance system, it is necessary to apply a comprehensive focus on the concept of financial need which must include criteria on clinical risk related to age and sex (morbility and mortality), clinical risk on social conditions affecting health service demand and transportation to facilities. All criteria must be expressed by quantitative variables, for the measurement of the progress level on resource allocation.

For this purpose, the financial needs of the regions for the individual health service provision will be evaluated. This is the competency of RG´s and involves most of the current expenses budgeted for health. Table No. 12 shows the indicators corresponding to each of the criteria identified, as well as the variables applied.

Table 12
Criteria, indicators and variables to evaluate the financial needs of regional governments for individual health service provision

Relevant Criteria	Partial adjustment indicator	Name	Variables Used
Clinical risk associated to age and sex	Health needs index of region i	INSi	Consisting of the mean standard costs (CT) related to service for healthy population
Clinical risk associated to social condition	Social risk index of region i	IRSi	Means of the average chronic malnutrition rate index (IND1) and the mean mortality rate (IND2), which compares said rates among regions having different poverty levels
Resolutive capacity gap	Supply gap index of region i	IBRHi	Human resource gap (BRHi)
Differences in costs	Cost index services in the region i	ICSi	Relation of pocket money among regions having different population density rates

Thus, the clinical risk associated to age and sex has as indicator the health needs index (INS) consisting of the mean standard costs (CT) related to service for healthy population, gyno-obstetric conditions with or without complications, chronic and acute diseases, and pediatric conditions. Costs are weighted by the clinical risk of the population. The health needs index of each region shall be calculated by the following formula:

$$INS_i = \frac{CT_i}{CT_{perú}}$$

Conversely, the clinical risk associated to social conditions shall be evaluated by the social risk index (IRS), by means of the average chronic malnutrition rate index (IND_1)

and the mean mortality rate (IND_2), which compares said rates among regions having different poverty levels. IND_1 and IND_2 are calculated for each region as follows:

$$IND_1 = \frac{\text{Chronic malnutrition rate}_i}{\text{Chronic malnutrition rate regions with poverty from 20\% to 40\%}}$$

$$IND_2 = \frac{\text{Mortality rate}_i}{\text{Mortality rate regions with poverty from 20\% to 40\%}}$$

Thus, the social risk index for each region corresponds to the following equation:

$$IRS_i = \frac{IND_{1i} + IND_{2i}}{2}$$

Also, the criteria for the resolutive capacity gap has as indicator the supply gap index (IBRH), consisting of the percentage of insufficient monetary resources in each region to make possible an adequate amount of human resources for the provision of individual health services under international standards (BRH). The BRH estimate is made assuming three type of professionals: doctors, nurses and obstetricians. The following math expression is used to calculate the supply gap index for each region:

$$IBHR_i = \frac{BRH_i}{BRH_{Perú}}$$

On the other hand, the differences in cost are evaluated by means of the service cost index indicator (ICS). This indicator arises from the relation of pocket money (GB) among regions having different population density rates. The calculation of the cost index for services corresponding to each region is prepared with the following formula:

$$ICS_i = \frac{GB_i}{GB \text{ density between 30 and 100 habx Km}^2}$$

All indicators explained above are multiplied among them to create an adjustment factor (FA) for each regional government, which makes possible to quantitatively summarize all criteria considered to evaluate each region´s financial needs for the provision of individual health services. The formula applied to calculate the FA in each region is as follows:

$$FA_i = INS_i \times IRS_i \times IBHR_i \times ICS_i$$

Finally, FA is used to find the progressive distribution percentages of public resources among regional governments; this is known as target distribution (DO). Each regional government´s distribution percentage shall be as follows:

$$DO_i = \frac{FA_i \times poor_i}{\sum(Fa \times population_i)}$$

Table No. 13 shows the target distribution calculated for the regions of Peru on 2000 and 2009, and also compares the actual distribution of said years. Although the target distribution has been also calculated for the Department of Lima and El Callao, it is not taken into account for comparison purposes with the actual distribution, given that they include resources allocated to Executive Units in Hospitals and National Institutes, as well as the resources allocated for MINSA´s administration.

Table 13
Actual distribution and target distribution according to financial needs (2000-09)

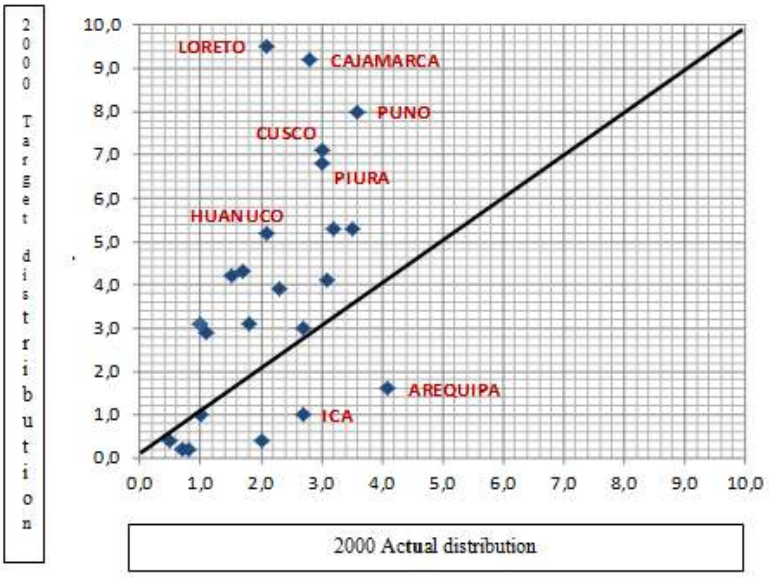
RG	Target distribution	Actual distribution	Target distribution	Actual distribution
	2000		2009	
Amazonas	3,1%	1,0%	2,7%	1,3%
Ancash	4,1%	3,1%	4,5%	3,3%
Apurimac	3,1%	1,8%	2,2%	2,3%
Arequipa	1,6%	4,1%	3,5%	4,5%
Ayacucho	3,0%	2,7%	3,0%	2,9%
Cajamarca	9,2%	2,8%	8,7%	3,0%
Cuzco	7,1%	3,0%	6,4%	3,4%
Huancavelica	2,9%	1,1%	2,6%	1,5%
Huanuco	5,2%	2,1%	5,0%	2,9%
Ica	1,0%	2,7%	1,0%	2,4%
Junin	5,3%	3,2%	5,9%	3,6%
La Libertad	5,3%	3,5%	5,9%	4,0%
Lambayeque	4,3%	1,7%	4,2%	2,0%
Loreto	9,5%	2,1%	8,4%	3,2%
Madre de Dios	0,2%	0,7%	0,6%	0,9%
Moquegua	0,2%	0,8%	0,2%	1,0%
Pasco	1,0%	1,0%	1,6%	1,0%
Piura	6,8%	3,0%	7,5%	3,7%
Puno	8,0%	3,6%	8,1%	4,3%
San Martin	3,9%	2,3%	5,1%	2,0%
Tacna	0,4%	2,0%	0,4%	1,4%
Tumbes	0,4%	0,5%	0,8%	0,8%
Ucayali	4,2%	1,5%	2,8%	1,1%

Note: Not include the Department of Lima and Callao. Prepared by author of study.

As shown, there are considerable differences between target distribution and actual distribution, both for the year 2000 and for 2009. This reveals that public resources distribution among regional governments do not consider their health financial needs.

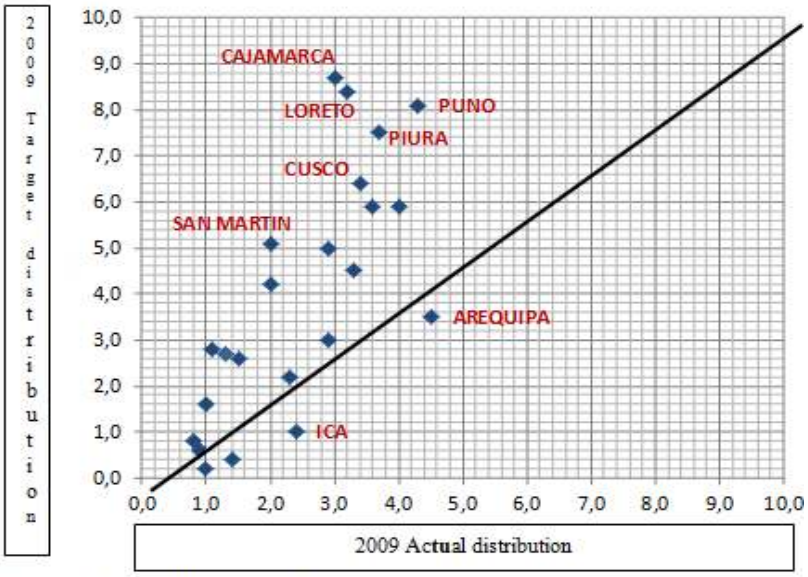
Charts 13 & 14 show a geometrical view of this situation Two Cartesian tables have been prepared for 2000 and 2009 comparing each region, their target distribution and actual distribution. It is expected that both distributions have a similar trend; thus, the points will be near the 45º line which will show a high level of equity. On the contrary, the levels of inequity shall be higher the further away the points are from the straight 45º line.

Chart 13
Target distribution vs. actual distribution – 2000



Prepared by author of study.

Chart 14
Target distribution vs. actual distribution – 2009



Prepared by author of study.

The charts show considerable inequity in resource distribution and it´s persistent given that there have not been significant changes during the last years. Moreover, after almost a decade, region points like Loreto, Cajamarca, Puno, Piura and Cusco continue being the ones further away from the 45º straight line and having more resource regression.

A more rigorous way to evaluate the level of equity in resource distribution is to calculate the difference between the concentration curve area in the actual distribution and the Lorenz Curve area in the target distribution. The numeric result of this difference is known as the Kakwani[14] (K) progressivity index which fluctuates in a -2 to 1 range. Negative values show that resource allocation for individual health service provision is regressive; that is, resources are assigned in a lesser proportion to regions having greater financial needs. Also, a decrease in the K index value means deterioration in the progressivity level of the resource distribution system.

Table 14 shows the results of K index for 2000 and 2009. In both cases values are negative, showing that actual distribution is clearly regressive.

Table 14
Kakwani (K) progression index values for 2000 and 2009

Performance Indicator	2000	2009	Cambio
Progression index (K)	-0.43	-0.38	0.05p

Prepared by author of study.

Nevertheless, the value of the 2009 index is slightly lower than that of 2000, but not important on inequity conditions for resource allocation. This can be explained by the implementation of budgets by results prioritizing some strategic programs (PPE), such as the Mother-Child and Comprehensive Nutrition, which assigns resources in zones having the highest rates of child malnutrition; the impact has been minimum.

[14] "Measuring progressivity of health care payments"; Quantitative Techniques for Health Equity Analysis – Technical Note Nº 16.

6. Transfer inequity and ANGR´s proposal

Finally, there are some studies and proposals on resource decentralization in Peru. One is the tax coparticipation model presented by the Regional Governments National Assembly (ANGR) drafted on 2009 and that will be discussed within the transfer inequity framework to regional governments.

The ANGR model proposes the unification of all types of transfers assigned to regional governments in a sole fund named Regional Coparticipation Fund (FRC) which will be funded by taxes collected by the National Government and later distributed to the Regions based on a clearly understood and transparent equity criteria formula.

It is important to mention that said proposal considers that in the short term it is not recommended to appoint tax collection responsibilities to Regional Governments; thus, the strengthening of their own resources is not proposed, but rather to increase the predictability of their future incomes and the horizontal equity among regions.

The FRC shall consist of a fix percentage of net tax revenues[15] (ITN) collected by SUNAT. The ANGR proposal supposes that this percentage should be 25%, which represents, approximately, the historical average of the public budget portion allocated to all regional governments. Regional Governments´ non-tax revenues such as mining royalties and oil Canon are not included in the FRC.

The FRC´s amount of resources shall be distributed in five sub-funds which were established considering main functions of the Regional Governments, as well as their importance in the Regions´ budgets. The sub-funds established are the following:

- Education: consisting of current expenses for education and culture.
- Health: consisting of current expenses for health and sanitation.
- Economic activities: consisting of current expenses for agriculture, fisheries, industry, commerce and services.
- Investment: correspond to investment expenditures and other capital expenditures for all the functions of regional governments.
- Other expenses: correspond to current expenses for remaining functions.

[15] Net tax revenues consist of domestic taxes plus customs duties, minus reimbursements.

Table 15
Sub-Funds

Sub-fund	Sub-fund description	FRC percentage
(i) Education	Current expenses for education and culture	52%
(ii) Health	Current expenses for health and sanitation	14%
(iii) Investment	Investment expenditures and other capital expenditures of all functions	27%
(iv) Economic Activities	Current expenses for agriculture, fisheries, industry, commerce and services	2%
(v) Other Expenses	Current expenses for remaining functions	5%
TOTAL		**100%**

Source: "Technical-Legal Proposal for Fiscal Decentralization". ANGR 2010.

Table 15 shows schematically the features of each sub-fund, as well as the percentages of FRC resources corresponding to each one. Also, said percentages shall be fixed and based on the distribution of Regional Government's joint expenses during the budgetary period 2008.

Once each of the amounts of the five sub-funds are established, said amounts shall be distributed among regional governments using indicators to reflect the needs of each region according to the purpose of each sub-fund. Table 16 shows distribution indicators for each sub-fund and its weighted average.

Table 16
Indicators used for the distribution of each Sub-Fund

Sub-fund	Distribution Indicators	Weighted Average
(i) Education	Population between 5 and 19 years old.	0.500
	Population that does not read or write	0.500
(ii) Health	Births outside a health facility	0.250
	Population without any type of insurance	0.250
	Population less than 5 years old with acute diarrhea diseases	0.250
	Rural population	0.250
(iii) Investment	Road kilometers without asphalt	0.166
	Homes without public water system	0.166
	Homes without public power grid	0.166
	Deficit of rural education centers	0.166
	Population per hospital bed	0.166
	Rural population	0.166
(iv) Economic	Rural population	1

(v) Other expenses	Total population	0.333
	Territory (kilometers)	0.333
	Homes with at least one unsatisfied need	0.333

Source: "Technical-Legal Proposal for Fiscal Decentralization". ANGR 2010.

A very important aspect of this proposal is that the total of net tax revenues included for the FRC also includes mining companies income tax. This means that current Canon transfers due to territorial criteria will no longer exist and, instead, the regions will receive one allocation for capital expenditures from the investment sub-fund which will be distributed according to infrastructure needs indicators. Certainly, the Canon elimination shall create very serious problems for the political viability of implementing this proposal.

For this reason and with the purpose of not having regions receiving fewer resources than those that currently are receiving by the Canon, the proposal modifies the sub-fund investment model. The adjustment is implemented by the following rule:

- If the amount of resources allocated to a region from the investment fund is **greater** than what corresponds by the Canon, the amount is transferred by the investment sub-fund.

- If the amount of resources allocated to a region from the investment fund is **lesser** than what corresponds by the Canon, the Canon amount is transferred. .

Evidently, this modification means that the amount of resources that will be transferred to the regional governments from the investment sub-fund shall be greater than the one considered in the original model. For that purpose, ANGR´s proposal considers that additional resources needed shall be assumed by the NG without affecting the FRC.

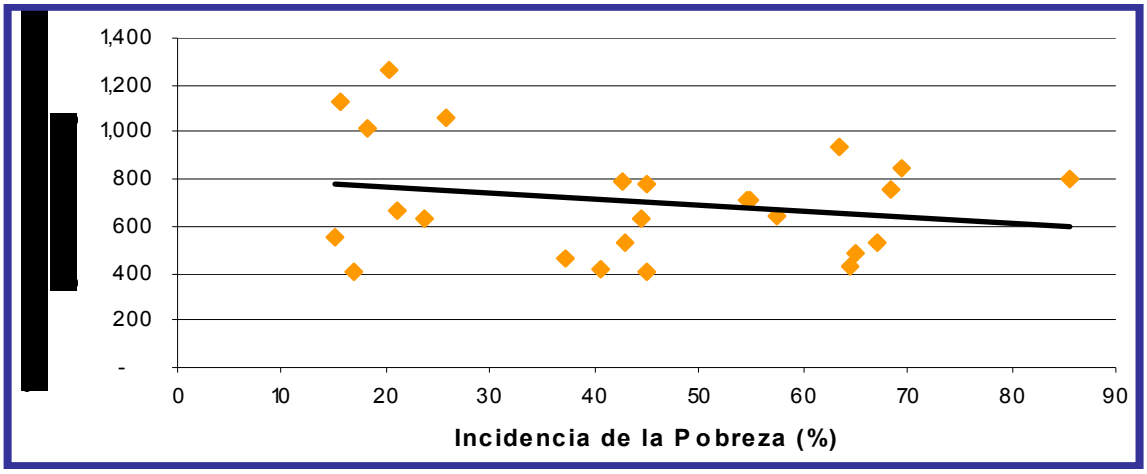
The implementation of the tax coparticipation model will have the following advantages:[16]

- The autonomy of the MEF is not affected regarding the fiscal policies of the country, given that the Coparticipation Regional Fund (FRC) is a percentage of net tax revenues.
- Regional Governments may forecast the resources of future years based of the MEF´s estimated tax collection in the Multiannual Macroeconomic Framework.
- The extension of the tax base and reduction of tax evasion have a direct impact on the amount of resources received by the regions.
- Resource distribution among Regional Governments is done applying population and needs criteria for each department (horizontal equity). This way the discretionary and inefficient allocation of the current transfer system will be eliminated.
- The sub-fund investment resources do not duplicate nor substitute those resources that currently are allocated to regional governments by the Canon. No region receives less than what is presently transferred by the Canon.

[16] See: "Fiscal Decentralization: brief diagnosis and proposal for the regional level". Agenda Descentralista, cartilla N° 1. Grupo Propuesta Ciudadana. March 2011

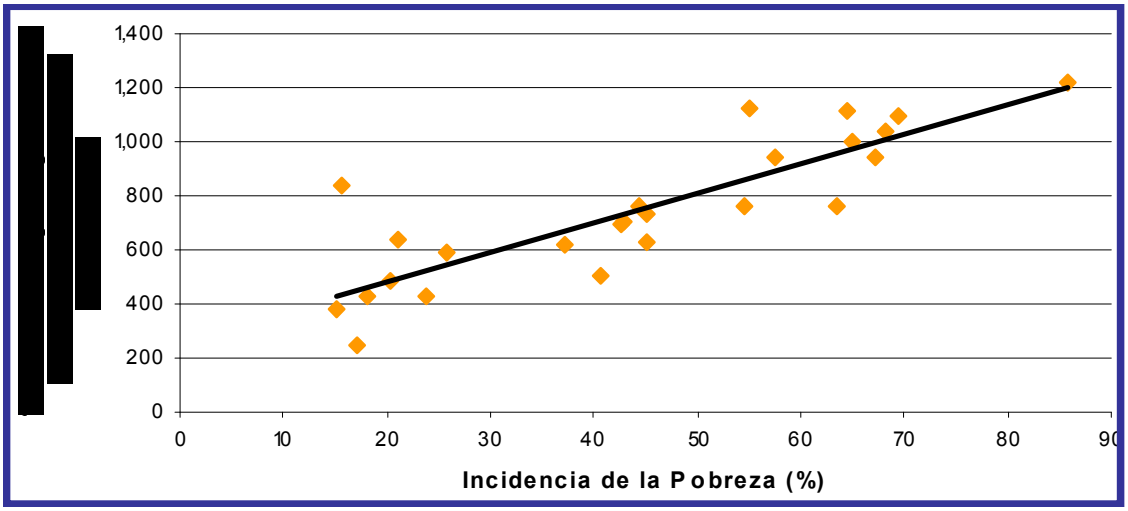
Thus, the ANGR decentralization proposal will create a more progressive allocation of total per capita transfers to the regions compared to their monetary poverty. Chart 15 & 16 show results for 2008. In the following chapter we will discuss if there is compliance for the health sector.

Chart 15
Real per capita transfers of regional governments vs. Poverty



Source: National Census 2007: XI Population and VI Housing. INEI (Lima Metropolitana is not included) Prepared by: INDE

Chart 16
Transfers per capita of partnership model vs. Poverty



Source: National Census 2007: XI Population and VI Housing. INEI (Lima Metropolitana is not included) Prepared by: INDE

6.1. Health transfers equity analysis as ANGR´s proposal

Although ANGR´s coparticipation model creates a more progressive global allocation of resources among regional governments, it is necessary to analyze if the distribution of the health sub-fund is adjusted to the specific equity features required for the health service provision.

If criteria previously established are considered as equity reference for individual health funds distribution, it can be established that the indicators applied by the coparticipation model for health resource distribution will not generate a sufficiently progressive allocation.

First, said indicators do not include all criteria to be taken into account for a comprehensive assessment of the sector´s needs. Especially those criteria on clinical risk related to social conditions (child mortality rates and chronic malnutrition according to poverty levels) and the gap between the resolutive capacities (human resources gap) are not included.

Second, although the health sub-fund indicators include these criteria they are not included adequately. For example, the clinical risk criteria on age and sex is represented only by the indicator of population younger than 5 years old with acute diarrheic diseases, not including other relevant issues as gineco-obstetric conditions with or without complications, chronic and acute diseases, as well as interventions on healthy population.

Additionally, although the regional health service and transportation to facilities cost is represented by the health sub-fund through the following indicators: births outside a health facility, uninsured population and rural population, these do not reflect correctly the territorial differences on cost, excluding pocket money according to density scale as a relevant indicator.

Third, the health sub-fund distribution indicators are designed to show the differences in needs only comparing population gaps, but these are not valid approximations reflecting weighted differences on the cost of service providers. Thus, health distribution funds of the ANGR proposal do not answer the financial needs perspective and its implementation; when only considering differences on population gaps, it does not allocate resources including the relative differences of financial needs that will make possible for the regions to close those gaps.

After mentioning the above, it would be expected that the ANGR proposal will not solve completely the regressiveness present in the actual distribution of health resources. In order to quantitatively prove this assertion, the distribution equity level reached by the target distribution presented on the previous section and the distribution equity level proposed by ANGR have been compared. In order to make possible the comparison of both distributions, the percentages of each region for 2009 have been recalculated

eliminating from the total resources to be assigned those of the Department of Lima and El Callao.[17] Table N° 17 shows recalculated distribution percentages.

Table 17
Percentages of distribution recalculated for the Regions

Region	Target distribution	Distribution (ANGR)	Actual distribution
Amazonas	4.0%	3.2%	2.4%
Ancash	4.7%	5.8%	5.9%
Apurimac	3.1%	2.4%	4.1%
Arequipa	2.1%	4.8%	8.0%
Ayacucho	4.0%	3.4%	5.2%
Cajamarca	11.7%	11.1%	5.4%
Cuzco	7.8%	6.7%	6.0%
Huancavelica	3.8%	3.6%	2.6%
Huanuco	6.6%	5.6%	5.1%
Ica	0.4%	2.0%	4.2%
Junin	6.2%	6.9%	6.3%
La Libertad	4.6%	7.5%	7.1%
Lambayeque	3.2%	4.4%	3.6%
Loreto	9.3%	5.2%	5.7%
Madre de Dios	0.5%	0.7%	1.5%
Moquegua	0.1%	0.5%	1.7%
Pasco	1.9%	1.6%	1.8%
Piura	6.7%	8.0%	6.6%
Puno	10.7%	8.5%	7.6%
San Martin	5.4%	3.9%	3.5%
Tacna	0.2%	1.1%	2.5%
Tumbes	0.5%	0.5%	1.3%
Ucayali	2.3%	2.6%	2.0%
Total	**100.0%**	**100.0%**	**100.0%**

Prepared by author of study

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Later, the Kakwani (K) progressivity index was twice calculated, the first one was applied between the target distribution and the actual distribution, while the second was applied between ANGR´s distribution and actual distribution. According to the results shown on Table No. 18, the K index is more negative in the first case than in the second case.

[17] ANGR´s coparticipation model establishes a distribution percentage only to the fund that will be allocated to regional governments, excluding Lima Metropolitana. Meanwhile, the target distribution of the previous section calculates percentages including the funds that will be allocated to the Department of Lima and of El Callao.

This means that the actual distribution is more regressive when compared to the target distribution than when compared to ANGR´s distribution. This occurs because the indicators applied in the target distribution show in a more comprehensive and adequate manner the relative differences in the region´s financial needs and, thus, have a better assessment of the existing inequity level.

Table 18
K index values according to scenarios

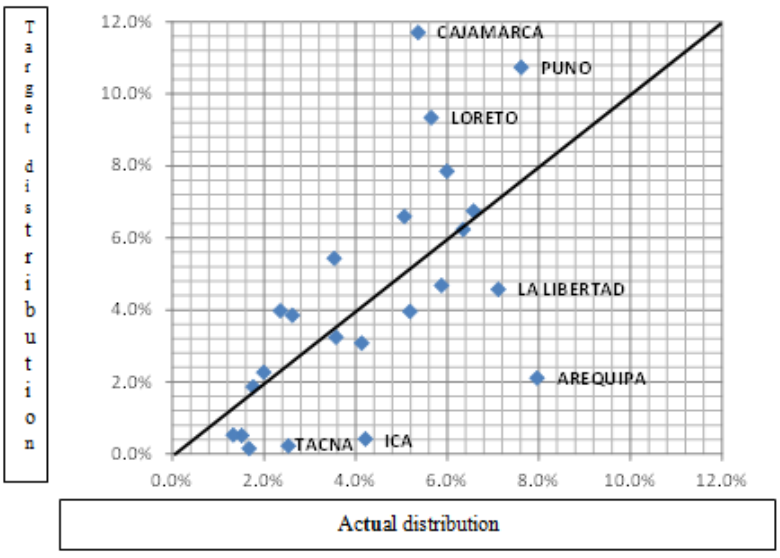
Index	Target distribution vs Actual distribution	ANGR Distribution vs Actual distribution	Difference
K	-0.252	-0.137	-0.114

Prepared by author of study.

A more intuitive and geometric approximation of these results is shown on Charts No. 17 and No. 18. In this analogous way similar to what has been developed in the previous section, two Cartesian Tables have been prepared, the first one (Chart No. 17) compares the target distribution with the actual distribution of each region, while the second one (Chart No. 18) compares the ANGR distribution with the actual distribution. The further the points are from the 45° line, the greater will be the inequity levels.

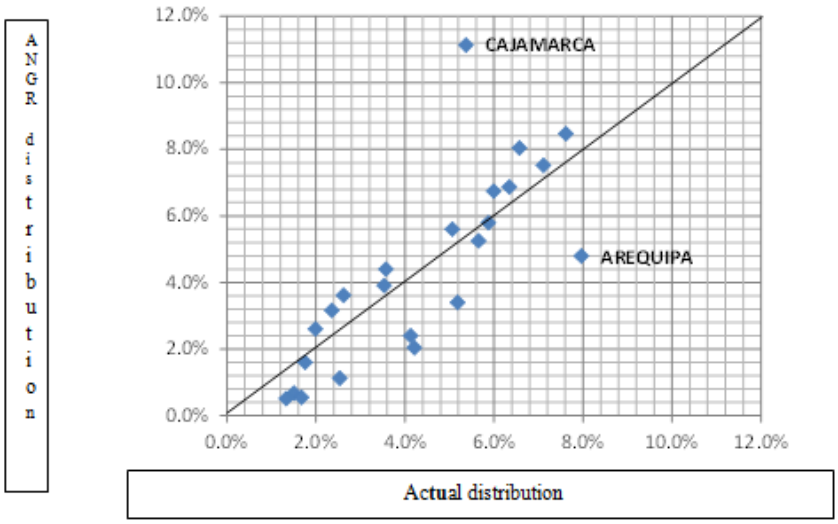
As shown in chart No. 17, the points represent a greater dispersion and are further away from the straight line, compared to what occurs in Chart 18 where the points are closer to the 45° straight line. This means that target distribution has a more rigorous equity standard and shows more clearly the regressivity in health transfers allocations to the regions, which does not occur in the ANGR distribution.

Chart 17
Target distribution vs. actual distribution



Prepared by author of study.

Chart Nº 18
ANGR distribution vs. actual distribution



Prepared by author of study.

It is evident that in order to determine if the health resource distribution is made using the ANGR methodology, the inequity of the current system will decrease but will not be overcome completely. Thus, the question on what level of ANGR distribution will improve equity is relevant. First evidence is obtained when comparing the magnitudes of K indexes presented in Table No. 17. The value obtained by target objective is almost double than the one resulting from ANGR distribution; therefore, the improvement on equity that could be generated by the last one is significantly less than the first one.

Additionally, the K index calculation was made between target distribution and ANGR distribution. The result shown on Table No. 19 determines that said value is negative, which means that even though the ANGR methodology improves equity, this is still regressive compared to target distribution.

Table 19
Value of K target distribution vs. ANGR distribution

Index	Target distribution vs ANGR Distribution
K	-0.099

Prepared by author of study.

Therefore, the ANGR proposal only establishes a more equitable distribution of resources but does not proposes procedures or mechanisms to gradually reach said distribution and without budgetary reductions. For that purpose, an alternative that could

be applied to overcome said restriction would be to apply equitable distribution only on health incremental funds assigned year to year within the public budget.

Other important aspect to be assessed in the ANGR proposal is if its resource distribution considers resource management efficiency criteria. Therefore, the coparticipation model focuses only on improving the predictability and equity of transfers to regional governments. Although said targets are essential, the lack of mechanisms to stimulate resource management efficiency could create perverse incentives given that the reduction in needs in one region could mean a relative reduction of its revenues or a slowdown on budget growth.

Although the efficiency criteria are not present in the distribution proposed by ANGR, these can be included by means of specific assignment mechanisms; nevertheless, the coparticipation model does not develop them.

Finally, a fiscal decentralization proposal must also include productive efficiency criteria. As shown in the introduction, many State functions do not have an optimum relation between current expenses and investments thus creating production inefficiency. This is due to the manner in which the public budget is prepared by establishing investment amounts and current expenses in a disassociated manner and without integrating them as part of a sole production function.

Therefore, resource distribution mechanisms applied within the fiscal decentralization context should promote production efficiency of regional governments when executing their competencies on health, especially the relation between current expenses and investment. This dimension is completely absent in the ANGR proposal.

7. Final comments

By acknowledging that the financial model of subnational governments is a fundamental aspect in every decentralization process, and its implementation must adequately define the functions and competencies to be assumed with a technical estimate of the amount of resources needed, this study explains how health public financing has occurred in regional governments within the decentralization context.

Therefore, the study provides a quantitative analysis in order to understand the nature and changes in public financing for health services between the national government and regional governments. In this framework, to answer the question of how the management responsibility on health financial resources has been changing according to government levels.

The first finding is that health expenses have increased significantly during the last eight years in both levels of government and, proportionally, the increase has been higher in RG´s. Nevertheless, this finding seems not very consistent with the decentralization process, in which it is expected that NG expenses and, especially Central Administration expenses, should be lesser in time so that decentralized service providers may increase their expense percentage.

This can be explained because during this period investment expenditures in the Central Administration (MoH) were those that proportionally have increased the most. The greater amount of resources has been allocated for building hospitals, such as the *Instituto Nacional de Salud del Niño* (Child National Health Institute) or the hospitals in Region Ica.

On the other hand, RG´s expenses increase has been on current expenses as well as capital expenditures, the last one on average 10 times more than the investment for 2003-2004. The expense increment is explained by the increase in AETAS and productivity payment to health staff, the inclusion of the professional´s contracting process cost for those hired under modality CAS and non-personal services and, goods and services expenses that were incremented 1.8 times. Also, maintenance, restoration and upgrading of health facilities and resources allocated to fund Budget by Results Strategic Programs, such as the Mother-Child Health Program and the Comprehensive Nutrition Program.

After confirming that there has been an important growth on health resources allocated to RG´s, we want to answer if these resources are enough given the functions and competencies assigned and transferred. To do so we have the difficulty of the classification of functions and programs shown on the Public Budget through SIAF which has no relation with the classification of functions and competencies of organic laws and function regulations in State institutions. Given these restrictions, we shall apply as a proxy variable the adequacy analysis of resources transferred to provide the Health Insurance Basic Package that can reach an approximation through some expenditures identified in SIAF. This calculation shows that in order service the current beneficiary population of SIS, the adequacy deficit or gap is estimated in more than S/. 2 billion (S/.

2062) and that except for Arequipa, Ica and Callao, the remaining regions have serious adequacy gaps in order to cover health expenses.

Later we will assess the budget management performance of different GR´s starting from their resource execution capacity. Said assessment will be made from a comparison perspective and applying two indicators: i) percentage difference on budget execution progress comparing the execution percentage reached by an institution in two different years and, ii) increment on the level of resources managed by an institution, in this case for investments.

Results show that most of RG´s, and especially El Callao, Loreto, San Martin, Arequipa, Tacna, Ica, La Libertad, Cajamarca, Cusco, Apurímac, Amazonas, Madre de Dios, Piura, Moquegua, Junín, Huánuco, Ancash, Ayacucho and Lambayeque have serious difficulties in the execution of their transferred resources because, at the same time, their level of investment has been reduced; they have executed less investment resources during the last three years.

Definitively, although the level of resource allocation and its execution capacity may or may not show the progress level in the decentralization process, an important variable to consider is the equity level of resources transferred from the NG to subnational governments. From this study it can be inferred that resource transfer is made in a regressive manner, which means that those regions having low percentages of NBI homes receive high amounts of per capita transfers.

As shown, there are considerable differences between target distribution and actual distribution, both during 2000 and 2009. This reveals that the manner in which public resources are distributed among regional governments does not take into account their health financial needs.

Results show that there is great inequity in resource distribution and that it is ongoing, given that no significant changes have occurred during the last years. After almost a decade, regions like Loreto, Cajamarca, Puno and Cusco are the ones suffering from resource distribution inequity.

Addressing this issue are studies and proposals on resource distribution in Peru, one of them is the tax coparticipation model presented by the Regional Governments National Assembly (ANGR) on 2009. ANGR proposes the unification of all types of transfers received by RG´s in a sole fund which will be distributed in five sub-funds that were determined considering said governments main functions, one allocated to health.

Thus, we think it is necessary the analysis of the distribution proposed in the health sub-fund to verify if it has the specific features of equity needed for health service provision. Taking into account the specific criteria on equity for the distribution of individual health funds, it can be stated that the ANGR will not generate an allocation sufficiently progressive. First, because the proposal does not include all criteria to be take into account. Second, because the criteria included in the health sub-fund are not clearly specified. And third, the health sub-fund distribution indicators are designed to reflect differences in needs comparing only population gaps and not including approximations to reflect weighted differences in health service providers.

Having expressed the above, it would be expected that ANGR´s proposal will not solve sufficiently the regressiveness in the actual health resource distribution. For this purpose, in each region were compared their target distribution with the actual distribution, and their distribution according to ANGR with the actual distribution.

Results show that target distribution proposed by this study has a more rigorous equity standard and more clearly presents the allocation regressiveness of health transfers to the regions. It is evident that if the health resource distributions were made applying the ANGR model, the inequity of the current system will decrease but not enough.

There are great differences between the target distribution and the actual distribution, both for 2000 as for 2009. This shows that the manner in which public resources have been distributed among regional governments has not taken into consideration their health financial needs. Thus, it is important the question about what financial model and resource distribution would improve equity.

The decentralization process is ongoing, thus there are many challenges regarding how to optimize not only the level of resources transferred by the NG to RG´s, but especially all allocation and distribution criteria for that purpose, which should be in accordance with the challenges on health issues confronted by the country.

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